THE UNIVERSITY OF SYDNEY 2011–2015 GREEN PAPER

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We wish to acknowledge that the University of Sydney stands on the traditional lands of the Eora nation. The University acknowledges that ancient and continuing connection to this land, as we seek to serve the Indigenous and non-Indigenous peoples of Australia.

PREAMBLE

The University of Sydney is a research-intensive university offering high-quality programs and educational opportunities to students from over 140 countries. Ranked in the top 100 universities in the world in the Shanghai Jiao Tong index and in the top 40 in the Times Higher Education-QS rankings, the University has a proud tradition of leadership in both research and teaching. Indeed we can make a strong claim to being the first university in the world to admit students purely on the basis of academic merit.

Being the custodians of a proud tradition and a major international institution for research and teaching, however, does not guarantee continuing success. The University of Sydney, like any university, cannot afford to be complacent. The higher education sector in particular, and the broader social, political, institutional and economic climate more generally, is changing rapidly. The University must strategically adapt in order to thrive in this volatile environment.

This situation, however, should not be the occasion for hasty reorientation to contemporary fashion. On the contrary, over the last year we have taken time to engage in a wide-ranging conversation with staff, students, alumni, friends and supporters of the University, and with the wider community, a conversation about our mission and our strategies for the five years from 2011. We have wanted better to define the University's mission, to identify the challenges ahead, and to formulate the strategies that we will need for the University to flourish. We have sought assessments of the University's current strengths and weaknesses, and advice on the range of opportunities that we must embrace to meet the challenges ahead.

To this end we have conducted a staff survey involving nearly 800 respondents, a student survey which generated 4450 responses, 12 open workshops for all staff, and more focused discussions one-on-one and in larger groups with deans. We have held sessions for senior administrators in the University, for the Academic Board and for the Senate of the University. We have also spoken to alumni groups, to donors, and to community leaders and government in a variety of groups and settings. This has ensured broad input to the development of this Green Paper. In addition, the 2008–10 Brand Project, through Lipman Hearne, involved detailed interviews, focus groups and informal meetings with 380 staff, 80 students and 170 external stakeholders (alumni, employer organisations, friends and supporters) as well as detailed questionnaires resulting in nearly 5000 responses. Such research has provided invaluable information on how the University's various communities view our current situation and the challenges that we face. These views and opinions have added an important qualitative dimension to the more usual quantitative forms of evidence on institutional performance that we have to hand. This evidence, qualitative and quantitative, has helped shape much of the following discussion.

This Green Paper outlines our preliminary thinking about the strategic opportunities ahead, and the key decisions the University might take over the next five years to sustain and enhance its standing, and contribution to the public good. It works on the assumption, confirmed through the consultation we have undertaken, that the University, while making a very significant contribution to the public good in many areas, still has vast untapped potential to make an even greater contribution. We were impressed by the enormous goodwill in the community but also the potent aspiration of our communities (staff, students, alumni and friends) for the University to do even more to contribute to

the advancement of teaching and research in the national interest. Realising this potential will require bold action and a clear-headed assessment of the contexts in which we operate, and of how to be more effective in defining and achieving our goals.

This Green Paper is therefore a further stage in the consultation process. Six key aspects of the document should be highlighted.

First, the Green Paper is essentially addressed to an internal audience of staff, students, fellows of Senate and alumni. It assumes familiarity with the general workings of the institution. Some of the proposals contained in the document may seem less radical to readers who do not spend their working lives in a research-intensive university, than they will to those who do.

Second, addressed as it is to an internal audience, this Green Paper is not a promotional document. It largely takes the excellence of the University as a given, and focuses on those areas in which we believe that improvement is required. In that it strikes a sometimes confessional tone about the weaknesses of the University, those weaknesses must be seen as areas for improvement in an extremely high-performing institution. It should also be acknowledged that the weaknesses outlined here are characteristic, in some form, of almost all long-established research universities, both in Australia and overseas.

Third, the document is designed to assist in the preparation of a strategic plan for a university, and not some other type of organisation. That may seem obvious, but its ramifications are worth emphasising. Universities, particularly ones as large and as complex as the University of Sydney, rarely achieve a coordinated strategy when some high-level set of outcomes is centrally decreed: outcomes such as the overall numbers of students that will be admitted; the disciplines that will or will not be offered; the mix of undergraduate and postgraduate, or of domestic and international students, that will constitute the university. Readers who are looking for precise answers to these questions in this document will be disappointed, though we do clearly propose that overall student numbers should not grow. Rather, universities such as ours achieve strategic coherence when core purposes are agreed, when the implications of those purposes for core activities are explored, and when the academic and administrative life of the institution is so organised that local academic communities such as schools and faculties are able, and accountable, to achieve those purposes. We believe that issues such as disciplinary range and student mix are best dealt with, not at the university-wide level, but in communities of cognate disciplines held accountable to the achievement of a university-wide purpose.

This document proposes a core strategic purpose for the University, examines some of its implications for education and research, and outlines a number of organisational changes that will help us to achieve it. In the past 18 months we have established a new decision-making body in the University, comprising of the deans, the deputy vice-chancellors, the directors of some of the key university administrative services, and the Vice-Chancellor (the so-called 'Senior Executive Group'), to bring together the different parts of the University in joint planning and decision-making, and to increase their accountability to one another. We have also amended our budgeting and financial reporting processes for the same purpose, focused the activity of the Academic Board, and assisted Senate in thinking through its committee structure. The organisational changes to which this document devotes considerable attention are a further stage in this process of ensuring that we have effective organisational arrangements to achieve the core purpose outlined

in the Green Paper. Many of the issues that the document raises are issues to be addressed by those new units for academic and administrative organisation within their particular circumstances, and mechanisms for ensuring that they do so. Chapter 4 not only outlines those organisational changes, but also makes explicit the ways in which they will enable change in the direction that we believe we need to pursue.

Fourth, because of this focus, the Green Paper does not devote discrete discussion to many important areas of our activity, areas such as community and international relations, physical or information and communications technology infrastructure, or the professional development of our staff. This is not because we see these things as unimportant. On the contrary, strong performance in each of these areas is crucial to our success. Rather, in the case of community and international relations, and physical and information communications technology, it is because we see our approach in these areas as wholly shaped by, and dependent upon, our strategic purposes in the core areas of education and research. In that we devise strategies for these activities, those strategies are dependent upon, and integrated with, our approach to these core areas of concern. In the case of activities such as the professional development of our staff, we see these activities as fundamental ongoing responsibilities of the University and investment in them as essential. But the Green Paper focuses primarily on our vision for education and research, and on the organisational change that we think most urgent. It assumes that the implementation of strategies to further that vision and to effect that change will be built across the whole range of our work.

Fifth, to emphasise these third and fourth aspects of the document is not to suggest that we believe achieving our strategic purpose is merely a case of putting in place the appropriate organisational arrangements. Indeed, this Green Paper is full of proposals, some more and some less fully formulated, for a wide variety of aspects of our work. Indeed, some of those proposals are already the subject of projects on the Vice-Chancellor's Work Slate, the register of ongoing major projects across the activities of the University that are directed at improving its efficiency and performance (see Appendix 1). Specific allusion will be made to some of those projects where relevant. Each of these more specific proposals is directed at achieving the strategic purpose that the Green Paper outlines, and we are keen that those responding to the document should comment on these specific proposals as well as its more general ones.

Finally, the Green Paper contains neither an executive summary, nor a list of the proposals contained in the document. This is because we believe that it mounts a coherent argument from this preamble to its conclusion, and that the force of the proposals it contains can only be judged in the context of that argument. We would urge all members of the University community to set aside the few hours required to grapple with the document as a whole.

The Green Paper, which is essentially a discussion document, will be the subject of consultation in the period between 6 March and 19 April 2010. Readers who wish to participate in this consultation should visit sydney.edu.au/green_paper

Those deliberations will be the basis for the development of a White Paper and strategic plan, to be finalised in July. The White Paper will outline the key decisions arising out of the consultation, and offer a strategic plan for endorsement by the Senate of the University, together with an implementation timetable.

CHAPTER 1
OUR STATEMENT OF PURPOSE

1. Lessons from history

The foundation of the University of Sydney in 1850 was an expression of the aspiration of Australian colonists for a civil society based on merit and enterprise. As one of the founding fathers of the University, WC Wentworth, argued, this would be an institution open to all:

> *"In later years I hope the institution we now contemplate will afford a sphere of instruction, not for the colony alone, but for the whole family of men. It will be the fountain of knowledge at whose springs all might drink, be they Christian, Mahomedan, Jew, or Heathen. Its gates should be open to all, whether they are disciples of Moses, of Jesus, of Mahomed, of Vishnu, or of Buddha."*

(Speech to the NSW Legislative Council, 1849)

Of course, this claimed egalitarianism did not extend to Australia's first peoples, but it did mark the University as distinctive within the British tradition. It was secular and open on the basis of merit, as measured through public examination, rather than on religious or property tests, as was common elsewhere. Churches could establish residential colleges for students but these were entirely independent of the University and played no role in formal instruction or examination. In essence this became the basis for the Australian higher education system for the next 130 years, creating a system that took much from the British tradition, yet put in place principles that were distinctively Australian.

To give expression to these aspirations, the early supporters of the University devoted considerable energy to constructing the essential pillars for this vision: an extensive scholarship system so that young men (and from 1881 young women) of academic merit were able to enrol (and in the first decade of the University a third of the students received full scholarships and the remainder had subsidised fees); and a curriculum that would ensure that those students achieved their potential. In matters of curriculum the founding professors, such as the Rev. Dr John Woolley, were firm in their belief that the role of the University was to inculcate the capacity to be active, virtuous and enterprising citizens. Thus it was essential that all students be instructed in the liberal and general disciplines of Western civilisation – an education that cultivated critical thinking and reflection – and for Woolley, in particular, this meant the classics, mathematics and the natural sciences. Unlike the University of Melbourne where the ideal of professional education was embodied in the foundation of the institution, Sydney proclaimed the virtues of a liberal curriculum. While Woolley saw a place for the later introduction of studies that would equip students for particular professions, a foundation in the humanities and sciences was for Woolley, and the other early professors, critical for the future of the colony.

Over the next 150 years, these founding principles set the pattern for the evolution of the University. We retained a strong commitment to a liberal tradition of arts and sciences, although what fitted into that tradition expanded dramatically over the years. Science

became a separate faculty in 1882; History and English were added in the 1890s; the University became the first in Australia to establish a chair in oriental studies (1918) and a department of anthropology (1923); but was also one of the last to have a department of sociology (1990). In the late 1990s new disciplines such as media studies, gender studies and cultural studies were added. Similarly, in the natural sciences, fields such as computer science, nutrition and dietetics, and nanoscience, have emerged over the last few decades, building upon the core traditions of mathematics, physics, chemistry and biology. In other words, the University has retained a commitment to being a custodian of the great knowledge traditions while simultaneously staying at the cutting edge through the adoption of new disciplines and methodologies. Currently the University of Sydney has over 50 humanities, social science and science disciplines, the most diverse range of such offerings in the country. In all the University offers education in over 210 fields, of which more than 140 are offered at the doctoral level, again the most diverse range in the country.

Equally important, as Woolley foresaw, professional faculties eventually began to be established (see Appendix 2). Medicine was the first, in 1883, although it had been an examination but not teaching faculty from 1856. Law became a faculty in 1890, largely through the generosity of the Challis bequest, although like Medicine it had offered examinations but no classes since 1855. The great expansion in professional faculties occurred in two waves – the 1920s and the 1990s – and the reasons for these periods of expansion bear closer scrutiny.

In the 1920s Agriculture, Architecture, Dentistry, Economics, Engineering and Veterinary Science became separate faculties (although some disciplines such as agriculture, engineering and veterinary science had been in Science earlier). There were two major factors propelling the founding of these faculties. First, governments and professions were agitating for the University to deliver training in these areas to meet perceived labour force needs (more engineers and agricultural scientists, for example, to sustain key industries and economic growth). Second, given the financial challenges of such expansion, the University in large part responded to significant donations to establish new faculties. For example, the expansion in Engineering was largely supported by a bequest from Peter Nicol Russell, and the very substantial bequest from Samuel McCaughey was instrumental in supporting Agriculture and Dentistry (as well as positions in Arts and Science).

The second great wave of expansion came in the late 1980s as a consequence of the Dawkins reforms, and the creation of a unified national system of higher education. An integral part of this reform process was the transformation of former Colleges of Advanced Education into new universities, and the amalgamation of many other independent institutions of higher education into already established universities. The University of Sydney, like other universities, was under some pressure from the federal government to take smaller institutions under its wing. In 1990 the University agreed to take Sydney College of the Arts, Sydney Conservatorium of Music, Sydney Institute of Education, the Institute of Nursing Studies at Sydney College of Advanced Education, and Cumberland College of Health Sciences. The early years of amalgamation were ones of profound culture shock on both sides. That these new faculties (Sydney Institute of Education, however, was absorbed into the existing Faculty of Education) have become important parts of the University is testament to the energy and enterprise of many staff.

There have been other developments in the faculty structure. Education became a separate faculty in 1986, having been a department in Arts for many years. Similarly Pharmacy was established, after much lobbying from the profession, as a separate faculty in 2000 (it had previously been a department in Science and, before 1933, in Medicine).

This rich history of expansion in the number of faculties, be they outgrowths from established faculties, newly created, or the result of amalgamations, tells us something fundamental about the character of the contemporary institutional structure of the University of Sydney. That structure has not developed as a consequence of some carefully crafted plan. On the contrary, it has grown in fits and starts, often as a result of serendipity, the happenstance of bequests and donations, the consequence of persuasive lobbying from particular professions, or in response to changing political and economic imperatives.

This history seems, on the whole, to indicate three things about the University. First, it indicates that, at its foundation, the University was marked by a radical commitment to social transformation, to building a new, and more meritocratic society in New South Wales. This tradition has survived as a part of the self-conception of the University, even at times when we have been criticised for being apparently 'elitist' and 'establishment'. Second, and notwithstanding this commitment to social transformation, our history reveals a foundational commitment to 'education' in its broadest sense, and not merely to professional or other 'training'. Again, this is a tradition that is important to the continuing self-conception of the University, even as our range of professional offerings has grown so that most of our faculties now offer some type of professional education. Third, our history shows that the organisation of the University, and the range of our offerings, seems to have emerged more by accretion than design. Bits and pieces over the years have come together, for a variety of reasons, to create the University's present form and content. Our University has not evolved from a considered strategy and plan but more commonly from accident and circumstance. It exhibits the features of its making: diversity, difference and, in some respects, a lack of coherence. In its present form the University offers a staggering array of disciplines and professional studies. A critical question informing the current strategic planning process is whether such diversity is either desirable or sustainable.

In light of this history, we would argue that it is essential for the University to engage in more critical reflection on its core mission. To understand what we are requires some consideration of what our communities think we should be.

2.   Perceptions of the University

One of the inspiring outcomes of the extensive interviews and surveys undertaken as part of the strategic planning process and the earlier Brand Project (involving around 10,000 people in all) was the warmth of feeling for the University and the desire for its future wellbeing. Staff, students, alumni, employers and friends expressed overwhelming affection, admiration and appreciation for the University. Many commented on the extraordinary research contribution of the University and equally the inspiring teachers, challenging courses, brilliant supervision, exciting and lively learning environment, and the quality of the extracurricular student experience provided by the University and student organisations.

This affection, however, was tempered by informed criticism. In particular, there was a concern that we were moving away from what many thought to be the distinctive Sydney mission: that of combining academic excellence with a deep commitment to social transformation. In ways that reflected the history outlined in the preceding section, many felt that our tradition was one of taking ideas seriously, not only in themselves, but because of the difference that they could make in the wider community. They expressed concern, however, that we had lost a sense of the distinctiveness of this mission and had become complacent. Most felt that the University was rather undifferentiated from the rest of the 'Group of Eight' research universities and that Sydney really lacked a declared or demonstrable strategic intent. These impressions were exacerbated by the ways the University of Sydney tried to represent itself. Interviewees commented frequently that Sydney seemed more interested in its 'heritage', than in being contemporary, engaged and relevant. The University's communities, through these interviews and surveys, were urging the University to embrace the tradition of engaged and purposeful intellectual pursuit and critical enquiry that they saw as the heart of our historic mission. To that end the University has embraced a new brand expression aimed at reinforcing its quality of 'active minds' and the fruits of this exercise will be rolled out over the next 18 months.

A new brand expression, however, will not allay some of the fundamental concerns outlined in these surveys and interviews. The problems are deeper. Many external constituencies cite how difficult it is to do business with the University. They complain that there appear to be a bewildering array of points of entry to undertake collaboration with staff. They are bedevilled by procedures and institutional structures that reflect the complexity of the institution rather than provide a way through it. Students face a confusing multiplicity of information, enrolment and candidature counters, policies and staff, all doing different things. Staff feel stifled by bureaucratic processes. For many the University of Sydney seems large, all encompassing but impenetrable, a place where something is always happening but nothing ever quite gets done. This is overly harsh, and underestimates the extraordinary range of contributions of staff and students to the public good and the sheer quality of their work. Nonetheless, it is the case that for many, particularly people outside the institution wanting to collaborate with us, we appear overly complex if not opaque. And when good outcomes occur, as they frequently do, for many that appears to be in spite of the systems we have in place not because of them.

Underpinning all this is a pervasive sense that the University of Sydney is merely the sum of its various parts, albeit in many instances brilliant parts, not a University that strategically leverages those parts to achieve something greater. If the University is to build on all it has, it needs greater strategic direction. The surveys and interviews make that clear. But which way should we go? How might we give practical form to a more coherent identity?

3.   Articulating a strategic purpose

The University of Sydney has, of course, always been engaged in defining and redefining its mission, ever since the moment of its foundation. As it has grown, however, that process has become more challenging. For example, the most recent attempt to establish a mission, in the last University strategic plan, focused on improving our performance across the board. Indeed the aim was for every part of the University to become the

leading faculty in the country in their area, in the top five in the region, and the top 40 in the world ('1:5:40'). This was an admirable aspiration and one that cleverly recognised that in an increasingly international educational environment driven by league tables, an improved ranking would undoubtedly have concrete financial benefits for the institution. It was also a mission that unleashed considerable entrepreneurial energy as the various parts of the University focused on improving their research and teaching ranking. What remained undone in this approach, however, was the work of critical reflection on what was distinctive about the University, and what its primary concerns should be.

Rankings cannot be the guiding principle for a university's mission. They might be an expression of how well an institution achieves its mission but, given the flaws in ranking systems, to be captive to them is potentially to sacrifice the essential identity of the institution. The difficulty of allowing rankings to determine our mission can be seen in the fact that, by doing nothing, undertaking no improvement in any form, the University could move from 37 in the Times Higher Education-QS rankings to notionally as high as 27, under some simplistic assumptions, merely by closing down eight of our faculties. But would that make us a better university? The critical issue is to define a relevant core mission and to use that as the measure for deciding the capacity of the parts to contribute to the whole.

To be relevant, any mission requires some assessment of the place of the University in a wider framework. There is no doubt that by virtue of its history and how it has evolved in the context of national and international higher education, the University of Sydney sits in a particular place in the higher education 'market'. There is a range of possible indicators, which clearly situate the University. For example it is a research-intensive university, one of the leading institutions in the country for competitive research grant income (see Appendix 3), with a wide variety of course offerings that attract some of the brightest students in the country (see Appendix 4). Moreover, retention and progression rates at Sydney are higher than the Australian average, pointing to both the quality of the students and the University's learning environment. This indicates clearly that the University of Sydney is one of Australia's leading research and teaching universities, offering world-class teaching, research and research training to Australian and international students.

Moreover, the University of Sydney offers some disciplines and programs rarely offered in other institutions in Australia, notably ancient Greek, Sanskrit, modern Greek and near eastern archaeology. In addition, it is one of a select few institutions offering training in such professions as dentistry, medical imaging and agriculture. Sydney is not unique with respect to these disciplines, but it is one of a small group of providers and in the Australian context offers the broadest range of disciplines of any university in the country. In its comprehensiveness it is greatly enhancing educational opportunities for students, and meeting national and international needs for training in these fields. Of course this returns us to a dilemma highlighted earlier: that of whether there is a tension between the University's aspirations to research and teaching excellence and the broad range of disciplines it offers. Has the University lost focus by spreading its operations across such a wide array of areas? But if we are to concentrate our resources on our core concerns how do we determine what those concerns should be?

Equally important is the fact that the federal government is currently attempting to encourage greater diversity and specialisation in the higher education system. Given the population and resource base of Australia there is widespread recognition that Australia cannot support 39 universities of equal size, quality, mission, research intensity and spread of discipline. If the University of Sydney is to carve out a distinctive place within this system it needs a clearer sense of what it is and what it should do.

To this end the Vice-Chancellor proposed, in response to his perception of the values and traditions of the University, a statement of strategic purpose to guide this process from its outset. In essence that statement has received warm support during our period of consultation, though concerns were expressed about some aspects of its framing. Re-expressed to meet those concerns, the statement is:

> *We aim to create and sustain a university in which, for the benefit of both Australia and the wider world, the brightest researchers and the most promising students, whatever their social or cultural background, can thrive and realise their full potential.*

At first glance this statement of purpose may seem overly generic. On closer inspection, however, it sets a clear direction for the University. It has the capacity to act as a litmus test for whether much that we currently do, or might consider doing, appropriately fits within our portfolio of activities. Our understanding of the strategic purpose will more fully emerge as it gives shape to the proposals in this Green Paper. However, four key points of explication should be made at this point.

First, the statement of purpose positions the University as a quality research institution, of both national and international significance, a home to the brightest researchers. This entails an aspiration for the work of our academic staff. In our understanding of research, we eschew distinctions such as that between 'fundamental' and 'applied' research as outdated. Indeed we believe that the research of the University should be balanced between work the focus of which is closer to theory, and work the focus of which is closer to praxis. But wherever it falls upon that spectrum, we understand research to be that which produces a significant and original advance in knowledge or understanding. The quality of the research to which the University aspires is that which is internationally competitive as the output of a researcher working in the relevant field at the relevant stage of their career. This distinguishes our work from, for example, routine testing in the natural or medical sciences, or the rehearsal of known arguments in the social sciences or humanities. It is also true to the vision of the University's work that Woolley proposed in the 1850s.

Second, the statement of purpose also implies a particular type of educational experience for the most promising students. This is an educational experience that brings them into contact with the brightest researchers, and trains them in the type of critical thinking that leads to significant and original advances in knowledge and understanding. It is also an education that 'maximises their potential' across the whole range of their abilities by developing their generic skills, not least in leadership, both inside and outside the classroom. This understanding of our mission distinguishes our work from, for example, the mere training of work-ready technicians with skills in a particular professional field. We are hoping to produce the graduates who will advance the work of, sometimes transform, whatever field of endeavour they eventually undertake. This is as true for our professional courses as it is for our more generalist ones.

Third, the statement of purpose assumes that the particular type of social contribution that we have to make is that which can only be made by the brightest researchers and most promising students. This is an important point. The University has a proud tradition of social engagement of many different types in many different fields. Such a tradition of social engagement is no less than might be expected of an institution the history of which is grounded in a commitment to social transformation. Yet some of that activity has only a marginal link with our core purposes in teaching and research. It is implicit in the statement of purpose that, before undertaking any particular type of activity outside teaching and research, the question must be asked whether doing so creates new opportunities for our students and researchers as they engage in their fundamental work. The largest contribution that an institution such as Sydney can make to Australia and the wider world is twofold. It is the development of significant and original contributions to knowledge and understanding, particularly in areas of pressing social concern, and to seeing those contributions disseminated and influencing practice in the community more broadly. It is also providing a cohort of students well trained in critical thinking and other generic skills.

Fourth, the statement of purpose suggests that the University should be looking for the greatest talent wherever it is to be found. This has at least two important consequences. First, the University should be agnostic regarding the nationalities of its researchers and students. It should therefore, in as much as it is possible, avoid setting 'Platonic' ratios of international to domestic students. It should also avoid setting 'Platonic' ratios of postgraduate to undergraduate students. Instead, as we shall outline in the following chapters, it should allow the mix of students to be determined by disciplinary communities in the University using as their primary criterion the availability of very able students, within the limits allowed by their need to guarantee a mix of different types of student to ensure financial viability. Second, as regards students, the statement of purpose is inclusivist in its assessment of intellectual ability, focusing on their promise at the point of entry, and not merely on the track record of performance they have at that particular moment. This is important if the University is to contribute to the goal of broadening participation nationally in higher education. The challenge inherent in such an approach will be to define and identify promise, an issue that we discuss further in Chapter 5.

It can be seen, then, that this statement of purpose builds upon both the history of our University and the expectations of our community outlined earlier in this chapter. It also builds upon the work that emerged from our consultations about an institution that both takes academic excellence seriously and is committed to seeing ideas make a difference in the real world, a place both reflective and engaged. The following chapters explicate this vision more fully as regards both research and teaching, identify impediments to its achievement, and suggest ways in which we might make it more fully the hallmark of all that we do. Indeed, in ways that are explored more fully in Chapter 4, we should use it as a litmus test for identifying not only those new activities that we ought to embark upon, but also those of our current activities that do not fit with our core purpose and from which we ought, where possible, to withdraw.

Before turning to these issues, however, it is important to outline the context, both external and internal, in which our strategic planning is taking place. Chapter 2 focuses on the external context in which the University is operating, a context of increased international competition for the best staff and students, and developing public expectations of our work. This context is presented at this point in the Green Paper, not because it ought wholly to drive our strategy, but because it sets many of the parameters for our planning. Chapter 3 focuses on the context internal to the University in which our strategic planning exercise is taking place. In particular, it looks at impediments to achieving our strategic purpose that arise from the current organisation and administration of the University, and from our constrained financial resources and physical infrastructure. It presents these issues at this point, again not because they ought exclusively to determine our strategy, but because they are challenges that we cannot afford to ignore.

CHAPTER 2
THE EXTERNAL CONTEXT FOR OUR STRATEGIC PLANNING

Core to the statement of purpose is an awareness that the University operates as part of a complex higher education sector in both Australia and the wider world. Of course a comprehensive consideration of the changing external context in which we operate is outside the scope of this Green Paper, but two need particular emphasis. These are an increasing international competition for the most able staff and students, and an increasing range of public policy aspirations for the university sector in Australia. The key to meeting both these contextual challenges may well be founded in an affirmation of the values embedded in the strategic purpose outlined in Chapter 1.

1. International competition for staff and students

In recent decades both academic staff and students have become more internationally mobile. Thus, although it is a categorisation with which many are uncomfortable, education is now one of Australia's largest 'export industries' (hovering around third or fourth largest). Higher education is an integral part of this industry. Indeed international students now constitute around a fifth of the entire student population of Australian universities, although there are some universities where the proportion is much higher. Significant inflows of international students have enhanced the cultural diversity of the university student population and thereby enriched the student experience.

Australia, however, is only one participant, and by no means the largest, in an international market for good staff and promising students. Competition for the best students and staff is dramatically increasing and the University must be able to respond to these pressures.

Increasing competition for international students

Greater international competition for students is likely to affect our ability to achieve our strategic purpose. By some estimates the flows of students (fee paying, exchange and study abroad) around the international higher education system is of the order of three million a year, and while the United States still commands the highest share of this market, with around 21 percent of international students, Australia has emerged as a major player in this market, moving from around a 4 percent share in 2001 to above 7 percent by 2008. In total there are almost 189,000 international students enrolled onshore in Australian universities (representing around 20 percent of all enrolments). The University of Sydney was slow to enter this market but has made substantial gains over the last five years (see Appendix 5). There are now around 10,500 international students here, constituting around 22 percent of our total enrolments.

The arrival of these international students has brought many advantages to Australian universities, not least our own. It has enriched our campus life. It has given us an impressive network of alumni and friends throughout the world. It has also, given that the fees international students pay are not capped at a level that fails to reflect the real cost of their education, been of great financial benefit to the Australian university system and masked shortfalls in public funding. These benefits have led many Australian universities to pursue a policy of almost unconsidered expansion of international student numbers.

This rapid increase in international student numbers has not, however, been without its challenges. Two merit particular attention. First, international student enrolments in Australian courses have been remarkably uneven. This places a real planning pressure on universities by encouraging growth in a handful of fields that are particularly attractive to international students, whether or not a given university would otherwise choose to grow those fields on academic grounds. The greatest demand has been in the area of commerce and business degrees where in many universities, including ours, international students constitute half, sometimes more, of the student population. Engineering has also been popular, as have been degrees in design, architecture, veterinary science, and law. Other areas have been less popular and this has undermined the funding base for key science, humanities and social science disciplines that are less likely to attract international students. Thus some have argued that international enrolments have a distorting effect on the internal disciplinary economy of Australian universities.

Second, an increased reliance on international student fee income has arguably left the Australian university sector excessively vulnerable to the increasing competition for high-quality international students. It is true that the international student market has been remarkably resilient in the face of the global financial crisis. The market continues to grow despite the fragile nature of the international economy. Australia's reputation for high quality, value for money education and a safe and secure environment is serving the national sector well. That our language of instruction is English is a further factor in our favour. Australian universities, however, cannot afford to be complacent. There are a number of potential risks. A worsening of the global financial situation may have long-term effects on the international student mobility market. Reports, fair or unfair, of prejudice against or violence towards international students could undermine Australia's reputation as a safe haven for foreign students. Perhaps the most significant long-term threat is increasing competition in this market, where Australia, if it were to fall behind its competitors in the provision of outstanding research training, excellent teaching, good support services or accommodation, might face a decline in its market share.

The signs of increasing competition are everywhere. The United States, with a high proportion of the world's leading universities remains the strongest player in this system. Over the last decade, however, leading UK universities, especially those in the Russell group, have begun to operate very effectively in the international market: they have been particularly successful in Asia, currently the greatest source of international students for Australia. There is also growing competition within Asia itself. Hong Kong and Singapore have both been investing heavily in higher education, to enhance research performance, teaching quality and reputation, with a view to establishing their universities as major regional hubs for students from around Asia. The serious decline in the Japanese birth rate over the last two decades is imperilling the sustainability of Japanese universities. As a result many of the leading Japanese universities are establishing special faculties where the language of instruction is in English to attract Chinese and Korean students to study in Japan rather than in the United States, United Kingdom, Australia or New Zealand. Some of these universities, for example Nagoya, have enrolments of over 1000 in these faculties. Another factor complicating the international market is a gradual erosion of the distinction between source and supply countries. China has traditionally been a major source of international students and this trend is likely to continue for at least the next decade. But a number of the most prestigious Chinese universities, particularly the members of the so-called 'China 9' such as Peking and Tsinghua, are now

accepting significant numbers of international students (around 2000 each per year). The international student market is now much more complex and competitive than it was 10 years ago, raising serious issues for the future viability of the Australian share of this market.

In light of this increased competition, the University has been working hard to ensure that it is an attractive destination for international students. In contrast to the mass market approach that some Australian universities are adopting, we are keen to position ourselves as a high-quality destination for the most able students from the region and the world. We have been looking at ways in which we can deliver on this promise in the support that we offer them. We have recently undertaken a review of the academic and other support services that we provide for international students, and are working on issues concerning their accommodation needs. We have significantly increased the numbers of international student scholarships that we offer and are looking to do so further. We are capping international student enrolments in some faculties, and working to increase international student participation in others. We are also seeking to diversify the countries of origin of our international student cohort. It is implausible that our overall numbers of international students should grow. The focus of the next period of the University's life must be on developing the quality, rather than the size, of this cohort. Only in that way can we hope to meet the increased competition for international students in a way that is both sustainable and consistent with our strategic purpose. This approach is undoubtedly more costly in the short term, but we believe that the mass market approach is ultimately unsustainable.

Increasing international competition for staff

Current projections of staffing needs, the age profile of the academic workforce, and the pipeline of PhD students being produced, point to a major staffing crisis in the next decade. Large numbers of academic staff will retire in the next decade, and the number of PhD students being produced is at present inadequate to replace them. This is an international phenomenon. At precisely the moment when there are fewer academic staff available, both Australian and overseas universities will be searching to fill large numbers of vacancies. Thus international competition for talent is likely to be very intense in the next 10 to 20 years unless we can significantly increase the number of PhD students graduating. The federal government has established a research labour force advisory group to explore policy options in precisely this area. The result of these labour market pressures is likely to be higher salaries for the best staff (creating significant upward pressure on university salary bills), and a demand from such staff for better research infrastructure and lower teaching loads.

Again we have a range of projects devoted to improving our ability to attract high-quality overseas staff. In particular, some parts of the University are experimenting with joint appointments with overseas institutions, particularly taking advantage of the seasonal differences between northern and southern hemisphere calendars. A current Work Slate project is developing guidelines to facilitate such appointments.

More generally, however, our best approach to flourishing in an increasingly competitive global market for staff and students is to position ourselves as a truly 'international' university. There is no other way effectively to serve the needs of both our domestic and international staff and students. This has several components. First, we need to

consolidate our reputation as an important partner in international higher education and research, particularly in our region. Our list of research and teaching collaborations with overseas universities is already very impressive (see Appendix 6), but we will have to build on this record of achievement over the next decade. To ensure that the partnerships that we have are deep and long-term, we must encourage, and perhaps invest in, exchanges of staff and research students (for periods of a month to a year). We must provide short-term accommodation for international staff and research students coming to the University under these collaboration arrangements. Similarly, we need to send far more students overseas on exchange at all stages of their education to broaden their horizons than we currently do. While we have over 10,000 international students coming to campus each year, at present we only send about 400 a year overseas on exchange. This is high by Australian standards but small by comparison with international benchmarks (particularly with leading US universities) and we have a Work Slate project on ways to increase participation in exchanges. A critical issue will be inculcating an international ethos among local Australian students and encouraging them to undertake a semester or year abroad as an integral part of their educational experience. This will involve further investment in financial support to encourage student participation in exchange partnerships.

Second, we need to become an attractive environment for high calibre international researchers in the ways outlined in Chapter 6; not least by the strategies described there for expanding the range of areas in which we can claim to be operating at the highest level internationally.

Third, we need to consolidate our reputation as an employer of choice. Workforce diversity and full inclusiveness in terms of gender, age, disability, economic status, and culture will need to continue and expand. For example, we have Work Slate projects around issues such as gender equity and creating family friendly work policies, the recommendations of which will be implemented during the planning period. But we need to work creatively, and on an ongoing basis, to ensure that the University is an environment in which staff are appropriately supported in both their work and professional development.

In short, we will only survive the increasing competition for international staff and students if we are able to achieve our strategic purpose; that is, if we are able to develop our reputation as a place committed to academic excellence and to making a contribution, not only in Australia but overseas, and keen to work with the most able people, whatever their social or cultural backgrounds. This picture of increased international competition makes the achievement of our strategic purpose even more essential.

2.   Responding to the public policy context

Political attitudes to universities have historically been, unsurprisingly, complex and contradictory. On the one hand there has been widespread recognition in Canberra and Macquarie Street of the crucial importance of universities in training the future workforce, undertaking research of significant national benefit and latterly of the contribution of higher education to economic growth. On the other hand there has been widespread impatience with the supposed 'esoteric' and non-commercial aspects of university research, a sense that academics are not working hard enough, a belief

that universities need to operate more as businesses and be more responsive to the market, and yet a suspicion that if they become too business-like, public priorities might be ignored. Thus universities have occupied an uneasy space, enjoined to embrace the market and yet constrained from capitalising on market opportunities through elaborate sets of rules governing fee setting, enrolment targets, disciplinary mix, teaching quality and research performance. These attitudes in part reflect a broader cultural ambivalence about higher education and the strong tradition of utilitarianism in Australian political culture.

We believe that the answer to the challenges presented by this historic ambivalence may again lie in the affirmation and achievement of our strategic purpose outlined in Chapter 1. That statement offers a helpful response to uncertainty about the value of higher education. On the one hand, it affirms the Sydney tradition, beginning with Woolley, of a commitment to academic excellence, especially in the core disciplines, and to a broad understanding of the value of an education in critical thinking and generic skills. On the other hand, it affirms the Sydney tradition of bringing academic excellence to the task of social transformation, of seeing ideas make a difference in Australia and the wider world. This is not merely to reflect the ambivalences of the Australian tradition. It is to affirm that precisely the greatest social utility of our work flows from a commitment to pursuing our core activities and to pursuing them well. It is on the basis of a confidence in the specific mission of a quality research university, and the contribution that it makes to the broader community, that we must approach public policy discussions about the future of higher education.

The federal context

At the federal level, the higher education sector is undergoing significant shifts in current policy parameters. The federal Labor government has instituted a number of comprehensive inquiries into higher education (Report of the Review of Australian Higher Education, known as the 'Bradley Report'), research and innovation (Report of the Review of the National Innovation System, the 'Cutler Report') and international students (Report of the Review of Education Services for Overseas Students, the 'Baird Report') and has working parties exploring other aspects of higher education, such as research training. The policy landscape is shifting and the University of Sydney needs to respond to these changes. It is impossible to do full justice to the range and variety of public policy changes envisaged or currently in train but a brief analysis of some trends is necessary. In particular, five aspects of the approach to higher education adopted by the current, and any likely future government, need emphasis as a context for our planning.

First, the public funding of universities is unlikely to increase significantly in the short to medium term. It is true that the current government is committed to an 'education revolution', and has recently devoted considerable new funding to higher education in a difficult financial period, particularly in the areas of infrastructure and research. This is an extremely welcome development from which the University has done well. Nevertheless, public investment in higher education is set between 0.5 and 1 percent of GDP, middling to low in the OECD range, and well below the levels of public investment in the United Kingdom, mainland Europe, the United States, and New Zealand. These figures also compare poorly with the levels of public investment among our regional neighbours such as Singapore, Japan, Korea and China. This relatively low level of public investment

is sustainable in part because of Australia's success in raising alternative sources of revenue for higher education through international student fees. But as we have outlined in the preceding section, this source of funding is itself far from unproblematic. While the government has committed to reviewing base funding levels during 2010, the current pressures on the federal budget are such that we cannot assume a significant increase in base funding in the short to medium term and we must accept that as a planning constraint.

Second, our planning must take into account the impact of new policies on research quality, primarily the Excellence in Research for Australia exercise. Given our strategic purpose it is imperative that the University perform well in this process. Disciplines and areas that perform poorly will be under significant pressure to improve in future rounds. How we mange this process will be explored in Chapter 4. One question that will confront the University, given our statement of strategic purpose, is whether we should be prepared to support areas that are not research intensive. This raises again the extent to which our current breadth of activity is sustainable for a University that aims at the highest quality of activity.

Third, the current federal government has committed to cultivating greater diversity in the higher education sector through a 'compacts' process. In other words, universities will be encouraged to negotiate distinctive missions with the government. This should provide a better context for the University of Sydney to engage in a productive conversation with the government about our statement of purpose, and its place in the wider higher education system. It will also provide the context for us to discuss with other Australian universities the opportunity to collaborate in relation to areas of activity that potentially fall at the margins of our strategic purpose.

Fourth, the Australian government, like all modern governments, is increasingly looking to the universities to focus their research and, to some extent teaching, in areas of national concern. While we ought never to see the university as a 'think tank' responding to the crisis of the moment, we must take seriously an engagement with issues vital to the prosperity of our nation and our region. This coincides with a need, in order to stay at the cutting edge of research, to focus our efforts in a defined number of large-scale cross-disciplinary research activities. These issues are explored in detail in Chapter 6.

Finally, and most significantly, the current government has announced that improved participation in higher education will be a key plank in its overall higher education reform agenda. Participation reform encompasses two key elements. First, the government has set a target of increasing the attainment of bachelor-level qualifications by 25 to 34 year old Australians from 32 percent, at present, to 40 percent by 2025. Second, the government has also announced a social inclusion strategy, setting a target to increase the proportion of students from low socioeconomic status (SES) backgrounds in higher education from the current rate of around 15 percent to 20 percent by 2020. Both these policies sit within a long Labor tradition of seeking to increase equity and access opportunities for young Australians. They also fit with our own purpose of attracting students of promise whatever their social or cultural background and our history of meritocratic entry. Given our constraints on growth, and our strategic purpose, it is implausible that we can contribute significantly to the achievement of the government's target of 40 percent participation. We can and should, however, work with the

government on the issue of participation by students from low SES backgrounds. This is not a small challenge for the University, as participation here by students from these backgrounds has fallen over recent years to around 7 percent. The question of attracting and working with students of promise whatever their social or cultural background is canvassed more fully in Chapter 5. It is important to note, however, that given our emphasis on cultivating the most promising students it is unlikely that the University will itself achieve a target of 20 percent from low SES backgrounds. The government has acknowledged that not all universities will be able to meet this objective. We will need to increase our proportion of low SES students, by at least 50 percent we suggest, while demonstrating a further contribution to the government's agenda through maintaining our high progression and retention rates for such students (yet another means of fulfilling our statement of purpose).

The state context

The University's relationship with the New South Wales (NSW) government is also an important context for achieving our aims. Australian higher education is marked by a peculiar division of responsibilities between federal and state governments. While the federal government controls funding and policy for higher education, most universities are established by state legislation and university governance regulations are largely instituted through state government provisions. In addition universities have a variety of relationships with state governments, especially with respect to research and teaching in such fields as health, education, mining and agriculture. Universities also contribute much to local economies, through financing infrastructure projects, commercialising research, and increasing the flow of population to regional and metropolitan centres, thereby growing revenue for states. Moreover universities, through such mechanisms as payroll taxes, are significant contributors to state government revenues. Thus thriving universities are a very positive contributor to state government budgets.

The area of teaching and research in the health disciplines offers an example of the often symbiotic relationship between universities and state governments. On the one hand, state governments provide significant infrastructure, resources and staffing for the training of doctors, dentists, nurses, pharmacists and other health professions. Universities would often be unable to replicate such resources. On the other hand, universities provide education and training for the health workforce of the future and have to tailor their intake of students and the education they receive to the specific workforce needs required by state governments. This can be a source of tension, particularly during periods when state health systems and hospitals are under funding pressures, forcing them to reconsider the provision of adequate infrastructure or seek a greater contribution from universities to maintain this infrastructure. Universities often maintain certain fields in health, because of the requirements to produce health workforce professionals, despite the financial penalties this entails. Some health disciplines are expensive to sustain, and can often be in deficit, but universities support them because of their commitment to the public good. Sustaining a viable relationship between universities and state governments requires recognition, on both sides, of the pressures this relationship engenders and a commitment to equitable partnership (and sacrifice) on both sides to maintain the relationship.

With respect to the specific context of NSW, universities here face a particular challenge. While other state governments, notably Queensland and Victoria, have invested in building partnerships with universities to drive innovation, and economic and social development, New South Wales has in general not engaged strategically with the university sector. Other state governments have invested significantly in teaching and research infrastructure in universities, for example the creative industries precinct at the Queensland University of Technology, the biomolecular research facilities at the University of Queensland and the Synchrotron at Monash University. This enhances the research capacity of universities in those states (bringing them additional staff, students and commercial partnerships), giving them a real advantage over universities in NSW.

If the University of Sydney is to achieve its goals, it needs to engage the NSW government more effectively in an ongoing conversation about the benefits of more strategic partnerships in knowledge and innovation. One partnership in which we are keen to engage with neighbouring educational institutions, the local community and the NSW government is the development of an 'ideas precinct' from the Australian Technology Park to Broadway. This would require, among other things, appropriate cooperation between the University and our neighbours in educational mission, in the infrastructure to support it (including information and communications technology infrastructure), and in coordinated contributions to the life of our local community. Another is in the appropriate training of teams of healthcare professionals to provide the NSW healthcare system with professionals already accustomed to working in a multiskilled environment. This type of active engagement with the state government and its priorities is something into which we have been putting considerable effort in recent times.

In short, the challenge from both the federal and the state context consists in our need to articulate what we do clearly, and to show why we add value to the public weal. In both contexts, we need to retain confidence in our particular mission as a quality research institution, and to demonstrate that we take seriously our tradition of engaged research and teaching, of seeing the ideas developed in the University make a significant difference in the life of the community that supports its work, even if the benefits of the University's work are not always realised in the short term. We must avoid the equal dangers of altogether ignoring, and of being slave to, short-term assessments of the utility of our work.

CHAPTER 3
THE INTERNAL CONTEXT FOR OUR STRATEGIC PLANNING

The context for our current strategic planning is, of course, internal as well as external to the University. Perhaps the most important internal context is an honest assessment of the current state of our educational offering and our research. These issues will be picked up in chapters 5 and 6. But also important is an assessment of the infrastructure, both organisational and physical, that enables that work.

Interestingly, the staff and student surveys undertaken as part of this strategic planning process contained some surprisingly consistent messages about this organisational and physical infrastructure. While there was high regard for the research and teaching excellence of the University, and considerable pleasure expressed at being able to work and study in such a stimulating environment, there was also remarkable unanimity concerning the major structural obstacles to achieving our full potential. Two stand out in the feedback and merit particular attention here. A third might also be added to them.

First, the feedback expressed concern that the University seems to be composed of high-walled, largely faculty-based, silos, inhibiting cooperation and collaboration. There was real concern that this leads to excessive duplication and overlap, both in academic programs and curricula, and in administrative support for academic units. Too many resources were being diverted from developing teaching and research to sustaining inefficient administrative practices and overlapping programs. Second, the feedback revealed widespread concern about the University's infrastructure, in terms of both quality and quantity. These two are important organisational contexts for any process of strategic planning; a third concerns the current state of the University's finances.

Any effort to refine the University's mission and achieve its statement of purpose must, of necessity, tackle these three issues as a matter of priority. Overcoming these obstacles will clear the path for reform and improvement in curriculum, teaching and research. Critically important will be improving efficiency to release more resources for research and teaching. Equally important will be sustained investment in physical infrastructure to provide a better environment for the 'brightest researchers' and 'most promising students'. These, of course, are not the only issues confronting strategic planning but they remain core concerns, and if we are to galvanise the enthusiasm and support of our staff and students we have to make substantial progress on these three fronts.

1.   Silos, duplication and overlap

All university organisational structures strike some balance between centralised and decentralised academic decision-making and administrative services. All universities are, to some extent, a federation of self-governing academic communities, with authority shared between local and central decision-making bodies. Moreover, individual institutions, like political federations, tend appropriately to move, over time, between periods in which the focus of the institution is on coordinating activity between individual academic units, and periods in which the focus of the institution is on encouraging local innovation. The guiding principle for that movement should be an ongoing commitment to the principle of 'subsidiarity', a commitment to balancing the needs for efficiency and coordination on the one hand, and local expertise and responsiveness on the other, with a bias towards the latter.

The University of Sydney has a strong decentralised faculty structure. Faculties have a considerable measure of independence: they decide on the delivery of programs; offer degrees (with the exception of the PhD, which is a University degree); determine which units of study are taught; develop research and research training programs; have considerable budgetary freedom; operate many self-contained administrative structures particularly around issues of student administration and staff support; operate their own marketing and recruitment teams and so on. Of course there are checks and balances. The Academic Board oversees all academic matters (degrees, programs, research training and so on), to ensure that what is offered conforms to accepted standards and policies. Recent reforms to the Academic Board have been designed to help it focus on this purpose. Central portfolios offer core services such as information and communications technology, corporate communications, international recruitment and support, student support, finance services and more (sometimes in collaboration with faculties). The Senior Executive Group was established in 2008. It seeks to bring coordinated decision-making across the faculties, to operate as a type of University 'council' with appropriate subcommittees. On any measure, however, the current structure of the University sits more towards the decentralised end of the spectrum.

Moreover, the fact that the University has 16 faculties of remarkably varying size, where some faculties are smaller than schools in some of the larger faculties, accentuates this decentralised structure. Although faculties range in size from some that have a student load of less than 500 to others that have a student load of over 6000 (see Appendix 7), each has a similar call on University-wide services and each runs a full complement of administrative services.

There are, of course, many benefits to so decentralised a system. It has promoted considerable innovation in academic programs, marketing and student recruitment. Programs are well targeted towards relevant local and international student markets. The high demand for our degrees suggests that the faculties have an excellent understanding of the contexts in which they are operating. Research and research training performance in many faculties is excellent, again suggesting that the decentralised model has many virtues.

There are, however, inevitably also costs to such a system and feedback from across the institution suggests that those costs may currently be too high. In particular, it has promoted intense internal competition within the University, with every faculty seeking to maximise student load and research performance in order to sustain local budgets. This has resulted in the hoarding of resources through the duplication of programs and expertise. It has also led to the wasteful duplication of administrative services and the correspondent diversion of resources away from our core activities in teaching and research.

There is abundant evidence for this contention. As a starting point, consider the duplication of academic programs and expertise. One example might be found in the discipline of sociology. At present we have three substantial groupings of sociologists (in Arts, Education and Social Work, and Health Sciences) and smaller groupings in several other faculties. Each of these groupings offers programs in social policy as well as sociology. There is substantial overlap in expertise between these groupings (for instance significant expertise in the sociology of health) and each delivers units, especially at

the postgraduate level in such areas as research methods, that look remarkably similar in scope and substance. Thus there is duplication in expertise and curriculum, and no one group has sufficient critical mass to generate the impact that such a concentration of expertise deserves. Moreover, because of the overlap in expertise, all three groups tend to be narrowly focused. Thus none of these groups has a substantial expertise in quantitative sociology. In other words, instead of having one large sociology and social policy program with a broad range of expertise (qualitative and quantitative) we have three smaller units covering in part overlapping areas in both research and teaching.

Of course this duplication is driven by many factors. The fact that the University is scattered across many different and widely dispersed campuses inevitably causes some replication (one of the sociology units is based at Lidcombe). Another potent factor is the need to serve the educational requirements of particular professions (in this instance teaching and social work). Moreover, there is cooperation and collaboration in teaching and research between these faculties. On balance, however, collaboration is at the margin. There remains considerable overlap, especially at the postgraduate level, where the desire to capitalise on fee-paying opportunities drives much duplication. Worse, faculty boundaries sometimes prevent students in sociology having access to outstanding sociologists in other faculties. Thus duplication is often an entirely rational response to the context in which staff work. Our concern is that University organisational structures exacerbate duplication and this does not always work in the best interests of staff or students.

A similar situation exists in many other areas of the University. For example we have two substantial groups in applied linguistics (in Arts and Education and Social Work), two groups in the history and philosophy of science (in Arts and Science), two in art history and theory (in Arts and Sydney College of the Arts), four substantial areas of expertise in ethics (in Arts, Science, Law and Medicine), two groupings in mathematics (in Science, and Engineering and Information Technologies), creative and visual arts in two areas (in Sydney College of the Arts and in Architecture, Design and Planning), computer-enabled design in many parts of the University (in Arts, Sydney College of the Arts, Architecture, Design and Planning, and Engineering and Information Technologies) and foundation programs and curricula in the life sciences, particularly in such areas as cell biology and anatomy, that are replicated across a range of faculties (such as Medicine, Science, Dentistry, Nursing and Midwifery, and Health Sciences). Of course some of this makes sense; ethics should be in many parts of the University, as should computer-enabled design. Some of it is driven by geography; Health Sciences and the Sydney College of the Arts because of their distance from the Camperdown Campus inevitably have to replicate expertise elsewhere in the University. It is understandable that faculties such as Dentistry might want to replicate some elements of a basic medicine and science curriculum by greater concentration on oral biology and anatomy. In some areas, however, there is genuine service teaching that reduces overlap; the School of Medical Sciences, for example, runs programs for the Faculty of Health Sciences.

Duplication and overlap is also apparent in the provision of units of study. Faculties try to protect load in order to sustain funding levels. What they often miss in this equation is that they then replicate expensive structures (academic and administrative staff, administrative processes) to keep that load. Although in these circumstances, it may seem at the local level as if the income earned from these units of study offsets the

expense of running them, it rarely does so if one takes a University-wide perspective. For example, Engineering and Information Technologies, concerned at the amount of load lost through the outsourcing of mathematics training to the Faculty of Science, in the early 2000s, built their own in-house mathematics program to keep the load, thereby undermining an element of the funding base for the School of Mathematics and compromising economies of scale. This also meant that Engineering and Information Technologies had to divert resources to maths teaching that might have been spent on building new fields within the faculty. From the perspective of Engineering and Information Technologies this was a perfectly rational response to the funding drivers in the system. From the perspective of the institution as a whole it was not necessarily a desirable development.

Exacerbating this problem of the duplication of units of study is the fact that the complexity of our organisational structure often makes it hard for students to cross-register for units of study in a faculty other than that in which they are enrolled. It is undoubtedly the case that one of the key strengths of a University of Sydney education arises from the flexibility of, in particular, our principal generalist degrees and the range of choice open to students. Indeed our degree rules allow for a third of a degree in Science and in Economics and Business, and over two-fifths in Arts to be taken outside the faculty of enrolment. A high proportion of students do take this cross-faculty enrolment opportunity. However, our organisational complexity puts arbitrary barriers in the way of students moving between faculties in this way. There are fundamental differences between faculties in, for example: the definition of the requirements to obtain a major; entry qualifications for honours; credit transfer; prerequisites and corequisites; and the extent to which students can take subjects from other faculties. Some of this is driven by the specificities of particular disciplines but much of it is also the result of habit and history. These idiosyncrasies create problems for students, especially when many of them pick subjects from more than one faculty to complete their degree. For example, a student taking a Science subject needs to know that they have to do 24 senior credit points to qualify for a major, while the same student has to be aware that a major in Arts requires 36 credit points. If a student gets these resolutions confused they can face the aggravation of being denied a degree because they have not fulfilled the formal requirements for a major. Caught in this administrative mire, students sometimes have to undertake additional units of study to complete the degree.

This is also evidence that our current academic organisation leads to the proliferation of degrees. Faculties in the University often seem to be in competition as much with each other as with other higher education providers. There is strong incentive, when a good niche market has been uncovered, for others to enter the fray. For example we have two relatively healthy applied linguistics postgraduate coursework programs in the University – one a broad ranging program in Arts with a TESOL component, another, a narrower but very successful TESOL program, in Education and Social Work – where there is marked overlap in content and method. Until recently there were two Psychology degrees in the University, one through Science, the other through Arts, the major difference between them being a prerequisite for mathematics in Science. Until the department of Government and International Relations was transferred from Economics and Business to Arts (in 2008) the University had a Bachelor of International Studies in Economics and Business and a Bachelor of Global Studies in Arts. (They have now been amalgamated as a Bachelor of International and Global Studies). In 2009 both the Faculty of Nursing and

Midwifery and the Faculty of Medicine presented new postgraduate degree programs in clinical trials to the Academic Board, though cooperation between the two is currently being explored. We could cite more examples but these give some indication of the persistent problem of duplication, overlap, internal competition and wastage of resources driven by these heavily decentralised faculty silos.

Duplication and overlap is not merely a matter of wasted resources. It is also a question of failing to achieve our potential. The University has an extraordinary range and depth of expertise in many areas, but sometimes these strengths are hidden. For example, the University has over 600 social scientists (a significant group by any measure), but they are scattered across 10 faculties and often work in complete ignorance of each other. This problem was highlighted in the 2007 Review of the Social Sciences (see Appendix 8), which led to some efforts to bring greater cohesion to this field through the creation of an Institute of Social Sciences and the transfer of some social science departments from Economics and Business to Arts. These have been important initiatives but the essential fracturing of the social sciences remains a key issue for the University. Lack of collaboration and hence critical mass means that the University is not capitalising on its expertise in this field. Similarly in the life sciences there is considerable overlap and duplication both within Science (there are two life science schools – Molecular and Microbial Biosciences and Biological Sciences) and between Science and Medicine (the School of Medical Sciences in particular). Certainly there is much more cooperation between these units than is the case with the social sciences, but there is a pervasive feeling that we are not achieving our potential in the life sciences because of the distribution of expertise and resources across different administrative structures. Despite goodwill, faculty structures inevitably constrain collaboration.

Overall, collaboration in academic programs certainly exists but the diversification of expertise across so many faculty silos is debilitating and frustrating for staff and students. The evidence of areas of significant duplication and overlap is compelling. The consequences include lack of critical mass, concentrations of staff in some areas at the expense of other areas, confusion for students, duplication of expensive equipment and infrastructure, and constraints on the development of new areas of study (as so many resources are tied up duplicating programs offered elsewhere in the University). Funding mechanisms (from Canberra and internally) perpetuate this tendency to duplication. Nonetheless, the overwhelming impression, one captured in our staff and student surveys, is that the University of Sydney is characterised more by fractured, disconnected and overlapping programs than a coherent plan of structured offerings or groupings of critical mass.

The barriers that exist to collaborative teaching within the University, also create problems for research collaboration, an issue explored in greater detail in Chapter 6. Although there are policies promoting the creation of cross-disciplinary centres and institutes, there are hurdles that some schools and faculties find difficult to overcome. These include investment of sufficient resources from all partners, workload, difficulties reporting multidisciplinary research to Canberra, and allocation of research quantum to the respective areas. These problems are even more acute with respect to research training, where the desire to secure load to a single area, rather than distribute it across departments, means some schools and faculties discourage joint supervision. Moreover Academic Board policies support associate rather than co-supervision, where

associate supervisors are accorded lesser significance and thus have less claim to load as a result of their efforts, a further disincentive to cooperation.

A similar situation arises with the provision of administrative support to faculties. Each of the 16 faculties, regardless of size, operates a full suite of administrative services for staff and students: these include student advice counters, student administration services, student recruitment and marketing units and so on. In other words, while faculties have services to meet their distinctive needs (such as those provided by some technical staff), they also replicate services common across each of the faculties. For larger faculties, or those distributed across a number of locations, there are also multiple school and faculty sites where services are again duplicated. Of course, geography is a powerful factor. Distant campuses, such as Rozelle, Cumberland, Camden, Phillip Street and Macquarie Street, will always require a measure of duplication. But most duplication of administrative services in the University cannot be justified in this way.

Evidence suggests, however, that this decentralisation of administrative services is wasteful and inefficient. Some of our preliminary benchmarking research suggests that in many of our core administrative programs we have a staff cost profile at least 30 percent (and arguably as much as 50 percent) above the benchmark norm (see Appendix 9). Such a finding comes with the obvious caveats. There are limitations in the usefulness of any benchmarking exercise. Sometimes the comparisons are far from appropriate. Universities are complex organisations with multiple purposes and missions (teaching, research, public outreach and so on). Even when we can benchmark with other universities, particularly overseas institutions, the comparison is not always exact. Moreover information about how other universities operate is often difficult to access, making direct benchmarking with like institutions difficult. Nonetheless, even when we consider these limitations our current analysis does suggest that the way we have devolved administrative services to faculties (and to so many faculties) is a factor in higher administrative staffing costs in comparison to some of our competitors.

This benchmarking conclusion is further strengthened by qualitative and case study data. Let us take just two examples for closer study. The first is that of research degree thesis examination. At the University of Sydney the administration of thesis examination (receipt of the thesis, contacting examiners, sending out the thesis, receiving examiner reports and supporting the committees that then deliberate on the outcome) is devolved to the 16 faculties (although some of the health faculties – Dentistry, Pharmacy, and Nursing and Midwifery – have outsourced this function to Medicine). Overall the number of administrative staff in the faculties who have thesis examination as the whole or part of their position description is around 25 people. In terms of full-time equivalent staff this works out at around 10 to 11 staff. In comparison the University of New South Wales, which has a centralised graduate studies unit for all administrative purposes, manages the examination process, for an equivalent number of theses, with a full-time equivalent staff of four to five. In other words it takes twice the staff at the University of Sydney (at roughly an additional $350,000) to perform exactly the same task.

A second example might be found in the area of marketing. In this area we have university-wide domestic student recruitment, corporate and international communications, and international student recruitment teams, and faculties have their own staff. In all there are around 115 marketing and recruitment staff in the University

and our annual spend in this area is around $21 million. It is true that we have had some significant success in this area, particularly in student outreach. However, much of our expenditure is uncoordinated and goes on producing bespoke special interest publications, events and advertising, the impact of which is often limited. We are spending more than we need to, to deliver less effective results than we might do. Because there is little coordination, we often see initiatives undertaken without clear goals; confusion as to the identification of, and best means of reaching, our target audiences; and wasteful spending on ineffective advertising and glossy brochures. There is a lot of duplication and overlap in these areas.

Case study and comparative quantitative benchmarking indicates that the University's highly decentralised faculty administrative structure results in higher staffing costs in comparison to some of our competitors. Thus funds are being diverted from the core business of teaching and research to administrative support and this is a key issue for the University. Recent years have seen a steady rise in the number of administrative staff in the University, without a universal sense among academic staff and students that their administrative needs are being better serviced.

It is important to emphasise that, on the whole, our administrative systems do work. They work because of the enormous dedication of our administrative staff, who are extremely committed to the mission of the University. But these staff often have to achieve results in spite of, rather than through, the administrative structures of which they are a part – structures that can give rise to considerable frustration and to the concerns that so many staff expressed in our survey.

Thus there is substantial evidence to support the view of staff and students that duplication and overlap, in academic programs, organisational structures, degrees, and administrative services, is a crucial impediment to the University achieving its potential. A major causal factor would appear to be the strong faculty structure, with many faculties of varying size, supported by a heavily decentralised administrative system. This has created rigid silos that inhibit collaboration and cooperation, promote internal competition and replicate processes, procedures and administrative structures. Overcoming these problems, reinvesting potential savings and unleashing the creative spirit of staff and students, is a critical challenge for the University's strategic planning process.

2.   Physical infrastructure

Another significant challenge identified by staff and students in response to our consultation exercise, is poor physical infrastructure. The concerns of our community were about both the amount of available space and its quality. To their concerns might be added the need to maintain our data networks.

We shall focus our discussion here on the Camperdown/Darlington Campus. Taking this campus as an example is not intended to suggest that the problem is one for Camperdown/Darlington alone, but the situation at that campus exemplifies many of the problems that hold true for our other widespread locations. Indeed, a major constraint on our ability to meet the organisational challenges outlined in the preceding section of this chapter is precisely the fact that the activity of the University is spread across a large number of campuses and outlying teaching and research locations.

The Camperdown/Darlington Campus is situated in a densely developed area with only limited scope for expansion. Much of our infrastructure spending here in the last fifty years, fuelled by a significant post war increase in students and funding, resulted in poor quality buildings that are now in significant need of refurbishment. Many of these buildings use their footprint in a less than optimal fashion, reducing the square metres available for teaching and research purposes in relation to land size. For a number of decades, particularly from the late 1970s to the late 1990s, the University was only able to maintain staffing levels and a diversity of programs largely through under investment in infrastructure. This neglect of infrastructure coincided with a dramatic increase in student numbers, exacerbating the shortage of suitable space.

As a consequence of this history, the University of Sydney is significantly constrained by a shortage of quality space. At Camperdown/Darlington, the Campus 2010 program and its flagship projects such as the School of Information Technologies building, the new Law School, and the Jane Foss Russell Building, has made some headway in meeting this need. However a significant shortfall remains. This shortfall has been exacerbated by our growing success in competitive research grant funding. In this sense we have become the victims of success. Our excellent research performance over the last decade, in particular our outstanding performance in terms of competitive research grants, has added to the demand for more infrastructure. In the Faculty of Science, for example, research-only academic staff, funded by grants, now constitute half the academic staff. Thus the demand for offices has grown exponentially. Similarly new staff expect high-quality research facilities – wet and dry lab space, specialised equipment, meeting and seminar space and so on. Lack of adequate infrastructure is also fuelled by increasingly sophisticated and expensive equipment that often needs to be housed in large research facilities.

Importantly, space constraints on the Camperdown/Darlington Campus restrict our ability to grow our higher degree research student numbers. We have, for example, a significant lack of adequate laboratory facilities on the campus. Similarly, the Faculty of Arts has over 500 research students but only around 150 desks in large open plan facilities for such students. These must be shared, through a hot desk system (except for students in the final writing up phase of their degree). We are clearly falling behind some of our competitors in terms of quality and quantity of infrastructure. Moreover, the growth in overall student enrolments of the last decade (an increase of around 8000 since 2001) has also placed enormous pressure on the availability of lecture theatres, seminar and tutorial rooms. Overcrowding in some courses is a serious issue and the lack of adequate teaching space exacerbates this problem.

In addition to this need for improved physical infrastructure, our information technology infrastructure is also in need of a significant upgrade. Indeed, there is a symbiosis between the development of our virtual and physical environments as better information technology systems, such as desktop and server virtualisation, can help us better to manage our space requirements. Crucial to the maintenance of appropriate information and communication systems on the Camperdown/Darlington Campus is a redevelopment of the data network that has already commenced, and that builds upon our work establishing a data centre and stabilising our systems. Importantly, we have been bringing together planning for capital expenditure on our buildings and networks in a coordinated way, so as to maximise the effectiveness of our spend on both.

These problems of the availability and quality of space, and the maintenance of our data networks, must be met if we are merely to maintain our current performance in teaching and research. Several large- and small-scale projects crucial to the maintenance of our activities are currently in planning. In relation to physical infrastructure, two major aspirations for expanding upon what we do will create an even more significant demand for growth.

First, we must expand our available residential accommodation, both for students and for visiting and relocating academic staff. International students, interstate, rural and regional students and some local students demand affordable accommodation close to campus. The University is significantly unable to meet this demand. This is imperilling our capacity to attract and retain the best students from overseas and around Australia. Thus we need to encourage the independent residential colleges associated with the University to build more accommodation, and we must acquire more land, either alone or in collaboration with other institutions, to build much more student accommodation of a variety of different types. We have a target of 6000 places in student accommodation by 2014. Without such levels of accommodation, the University may face a decline in international students and this will have a significant impact on the overall University budget.

As for academic staff, at present we provide almost no accommodation for them even on a temporary basis, although a few of the independent residential colleges have staff apartments. Again this puts us at a disadvantage. There is genuine need for newly appointed staff to have temporary (up to three months) accommodation to ease their transition into living in Sydney. Our failure to do so makes the process of adjustment to working here even more difficult and stressful. Perhaps even more significant is the fact that, as suggested in Chapter 2, one of the key priorities for sustaining our international standing will be developing much stronger collaborations with researchers at overseas universities. If we are to take collaboration seriously, facilitating exchange of staff and research students requires suitable short-term accommodation for those coming from other countries.

Second, the University has been developing plans for a large-scale infrastructure project in multidisciplinary research and teaching. This project, planning for which began in 2006, is a Centre for Obesity, Diabetes and Cardiovascular Disease, with space to accommodate nearly 1000 researchers in these fields, and estimated to cost $395 million. Funding from the federal government of $95 million has already been allocated. This is the first of what we hope will be a small number of such projects. That such projects advance our growing understanding of the future of the University's research and teaching will be evident from Chapter 6. Such large-scale multidisciplinary projects may be essential if we are to develop the University's potential, but they will place even more strain on existing resources of both capital and space.

This picture of our need, for both academic and financial reasons, to reduce the complexity of the University's administrative organisation and to release funds for both investment in our staff and in infrastructure, should be rounded out with a discussion of our current financial situation, the third important internal context for strategic planning.

3.   The University's financial situation

The University is in a comparatively sound financial position. We achieved a net operating margin of $68 million for 2009, and are projecting one of $119 million for 2010. In the context of the sector more generally this would be a reasonable outcome. Another factor in our favour is that currently we have no borrowings.

Nevertheless, this is a situation in which considerable financial prudence is required if we are to meet the strategic purpose outlined in Chapter 1. It is important to understand that our current sound financial position is more vulnerable than it might appear. Although our financial situation is sufficient for our immediate capital expenditure commitments, it does not provide a firm basis for undertaking the type of significant borrowing program that may be necessary to fund a program of much needed major capital expenditure.

This is for several reasons. First, the margin, as a proportion of expenditure, is relatively small. For example it is a little more than one month of our total salary bill ($67 million). Thus in an emergency we could not guarantee more than five to six weeks salary for staff out of our margin. Moreover the margin is to some extent the product of timing differences between the receipt and expenditure of various types of income designated for particular purposes, such as research grants, and capital grants that are tied to agreed projects. Second, this margin has only been made possible by significant reductions in expenditure on repairs and maintenance, and a range of initiatives to reduce non-salary expenditure. Third, while we currently have around $400 million in reserves, most of this is in fixed assets that would be difficult to realise in cash to fund short-term crises or long-term borrowings. Indeed in the present financial climate any attempt to realise the value of these reserve assets would incur a significant loss in relation to their potential real value if sold at a higher point in the market cycle. Fourth, our ability to fund capital works in 2009 and 2010 was due to a significant draw down of our cash reserves. Thus when we examine the situation more closely, removing these extraneous factors, the underlying reality is that operating and capital expenditure currently exceeds our revenue by as much as $60 million based on the 2009 capital program.

This financial vulnerability is partly the product of the global financial crisis, which has resulted in a loss of recurrent income from investments of over $100 million annually; it is partly a result of the historic underfunding of higher education; but it is also partly the product of the administrative complexity that we have outlined in the preceding section. It is worth noting both that our losses from the global financial crisis were well below the sector average, and that it is unlikely that we will regain the levels of investment return that fuelled our growth before 2008 for at least another decade.

If this assumption is correct, then the University faces some stark choices. We could, of course, do nothing: we could manage our situation as at present, grow our income to pay salary increases and manage our non-salary expenditures (that would require an annual revenue increase of around 6 to 7 percent). The consequence, however, would be little investment in new infrastructure, limited capacity to borrow beyond our current commitments, and limited capability to extend our strategic investment in the most promising students and the brightest researchers. We would see a further decline in the quality of our building stock, and have no capacity to build the infrastructure required to sustain the 7 percent growth projections. Given that both staff and students have highlighted infrastructure as one of the major weaknesses of the University, this seems a less than desirable course of action.

The easiest course of action might be to embark on an ambitious growth strategy, one that a number of Australian universities are likely to employ. This growth strategy would need to focus on fee-paying international and postgraduate students. For example, an increase of roughly 50 percent in international fee-paying students would deliver an additional return of over $100 million. However, these places would either be in substitution for domestic places, or in addition to our current student enrolments. If we adopted the former strategy, it would set us at odds with the government's agenda to increase domestic student participation. If we adopted the latter strategy, it would place new strains on our already over-crowded infrastructure, and lead to the type of problems outlined in Chapter 2.

An alternative path, noted already, involves modest increases in fee-paying student enrolments, matched by significant reductions in expenditure to increase our margin to support an ambitious borrowing program. The success of this strategy is by no means guaranteed and is critically dependent on a number of factors. First of all we will have to grow our revenue streams. These need to increase our revenue overall by around 6 to 7 percent just to stabilise our financial position. In other words we need annual growth at this level to fund salary and other non-salary cost increases. So we really need to aim for 7 to 10 percent annual revenue growth to move ahead of the cost curve. This is not easy. Achieving such a target requires significant growth in international student enrolments in areas other than the Faculty of Economics and Business. It is also dependent on a modest recovery in our investment income (a further downturn in the stock market could be a serious setback).

The University will also have to develop other sources of revenue. Some of these may build upon our work in teaching, such as offering more non-award and executive short courses to spread the burden. We are working at the moment on better coordinating our offerings of this kind across the University, and their place in our educational mission is outlined in Chapter 5. Some of these will build upon our research work. Our approach to the commercialisation of the fruits of our research is outlined in Chapter 6. We are also confident that we can build our work in the area of philanthropy. In total the University now has a bequest and donation portfolio of around $1 billion, well short of that of the leading North American or British universities but substantial by Australian standards (only Melbourne has anything equivalent). At present the University averages around $35 million a year in new bequests and donations. This puts us ahead of any other university in Australia by about $10 million annually. In 2009, a year in which many were suffering financially, we saw an almost 20 percent increase in the number of donors to the University, and we are confident that we will be able to grow our philanthropic income. The University has a history in this regard that we are working with some success to revive (indeed between 1920 and 1939 income from bequests and donations was roughly equal to that provided by the government).

Nevertheless, these other sources of income are not yet sufficiently mature to be the whole answer to our financial difficulties. Given the uncertainties involved in the plans we have for building our revenue, it is inevitable that the University will have to look very closely at the expenditure side of the ledger. We have already in 2010 introduced significant new expenditure controls. Close examination of faculty budgets reveals wide variations among our 16 faculties in their approach to the control of various types of expenditure and we have begun the process of developing clearer central guidelines.

Moreover, we believe that there are savings to be realised in continuing a program of the consolidation of administrative services. In 2003 a detailed investigation of our non-salary expenditures by external business analysts suggested that there was between $60 million and $90 million worth of savings to be found in improved processes, technology platforms and procurement strategies. As a consequence, the University has implemented a 'shared services' strategy over the last three years, in an attempt to ensure economies of scale through large-scale transaction process units undertaking high volume work formerly done in faculties. The aim here has been to reduce transaction costs and capitalise on effective process changes possible in large-scale units. The success of this strategy will be assessed in Chapter 4 but we have certainly made some gains. For example in the area of procurement, we have realised around $3 million a year in savings by renegotiating our electricity supply contract. There are further gains to be made on this front. We currently have over 31,000 suppliers to the University: 1500 stationery suppliers alone. By negotiating preferred supplier deals we should be able to use our size to arrive at significant discounts in a number of areas. Nonetheless, these strategies alone will not deliver the required results. Some of the evidence suggests that 'shared services' has not delivered the savings originally envisaged. A refinement of the 'shared services' model that we are proposing is outlined in Chapter 4. There is a need to reduce the organisational complexity and compartmentalisation that we saw in the first section of this chapter leads to so much duplication of activity.

These three aspects of the internal context for the current strategic planning exercise tend, therefore, to point in a similar direction: that the University needs to release resources consumed in maintaining its complex organisational life and to direct them towards teaching and research, towards salaries and infrastructure. The external context of the planning process makes it clear that a failure to do so may well render us unable to operate effectively in the international competition for the most able staff and students, and also to meet the increasing public expectations of the role of universities. In chapters 5 and 6 we shall see in greater detail some of the negative effects of our organisational complexity on our core activities of education and research. In order to give a context for the discussion of those two areas, and for the realisation of our vision for them, we introduce in the following chapter the proposed academic and administrative structure that we believe would most adequately equip the University to achieve its strategic purpose. Changing the academic and administrative structure of the University will not of itself realise our vision for education and research, but we believe that it is a necessary precondition to doing so, and that our preferred model for the organisation of the University should be outlined at this point.

CHAPTER 4
ENABLING CHANGE

It is a theme of this Green Paper that our current academic and administrative organisational arrangements create complexity and duplication; both fragment disciplinary communities and hinder cross-disciplinary research; and are excessively costly. These problems are arguably exacerbated by our current approach to resource allocation. In the first part of this chapter we briefly outline the key features of a new model for academic organisation and consider its most appropriate pattern of governance; outline a new pattern of administrative organisation; and consider a new resource allocation mechanism that we have already begun to introduce. We will then consider ways in which we might use these more enabling structures to tackle core issues in the achievement of the University's strategic purpose, in particular how we might tackle the problem of its appropriate size and shape. The test for any proposed structure is whether it helps us: to address more effectively than we do now the key issues of duplication and overlap in academic programs and administrative processes; to deliver better services and support for staff and students; and to generate the savings needed to enable the University to fund the borrowing required to service our infrastructure program. In the second part of this chapter, we return to consider our preferred model for academic organisation in greater detail, and in particular, to propose a pattern for its 'vertical' units.

A: Reforming the University

1.   A new model for academic organisation and governance

Our preferred model of academic organisation has a simpler structure of 'vertical' and 'horizontal' units than we do at present. By 'vertical' units, we mean units such as 'faculties' and 'schools'. By 'horizontal' units we mean units such as 'institutes', 'centres' and even 'networks' that bring together members of staff who are characteristically members of a 'vertical' unit such as a 'faculty' or 'school'.

Throughout this document, and particularly in this chapter, we shall often use these terms 'vertical' and 'horizontal' units rather than terms such as 'faculty', 'school', 'institute' or 'centre'. We also use the term 'constituent unit' to mean a smaller organisational unit located within a larger grouping. This is because we are agnostic about the use of terms such as 'faculty' or 'dean'. In any restructuring it might be the case that some faculties, currently independent units, become constituent units within larger groupings. Should they then lose the title faculty? In our view this is not necessary. There are often cogent reasons to keep the faculty title and retain the position of dean, especially in many of the professional faculties where brand and effective outreach to a profession are critical. Decisions on nomenclature might be best left to the organisational grouping itself. Indeed some faculties already prefer the title school ('Sydney Law School') and more recently the faculties of Medicine and Nursing and Midwifery have sought to emulate this nomenclature (while retaining the title 'dean'). The important issue is that battles over nomenclature should not derail the far more important academic, governance and administrative questions involved in any restructuring. Moreover, we note that, both nationally and internationally, the nomenclature used to describe different organisational units within a university is often inconsistent, not only between institutions, but frequently within the same institution itself.

The structure of vertical units that is explored as our preferred structure in the second part of this chapter, was arrived at after consultation with the deans of the existing faculties. The model that they, and we, prefer involves a College of Arts and Sciences offering the foundation undergraduate, postgraduate and research training programs of the University in the humanities, social sciences and natural sciences. Alongside this College, specialist schools would offer education in one or more professional fields. The majority of these schools would offer a cluster of related professional programs, many of which are currently offered in different faculties. This model of organisation for the vertical units is similar to, but in important respects significantly different from, one found in many North American universities. It combines several features of organisational structures more common in the United Kingdom and mainland Europe, with the basic North American pattern of a College of Arts and Sciences and professional schools.

One important respect, though not the only one, in which our preferred model differs from the North American model is that we do not propose that the professional schools should offer only postgraduate education. The University has for a long time been an innovator in graduate-entry professional education. More than 10 years ago we became the first in Australia to introduce graduate-entry programs in education and medicine. Since that time, we have continued to develop programs offering graduate entry to a wide range of professions including architecture, education, engineering, dentistry law, medicine, nursing, pharmacy, and the allied health sciences. These programs have been widely emulated by other Australian universities and in some universities there has recently been a move to providing professional education programs only at graduate-entry level. However, the model of wholly graduate professional education is not one that the University intends to follow. We believe that there is value to tailoring our curriculum so that it provides multiple pathways into professions better to meet the needs of the different student populations that come to university. Undergraduate pathways to professional study are very popular among students, often in combined degree programs. These are perfectly valid and pedagogically sound ways of combining the virtues of a broader focus with studying for professional qualifications. Offering choices in respect of pathways for professional entry programs recognises the needs of different student groups and provides a wider range of options. Just as importantly, it reflects the fact that we have never understood professional education to be a program of training. As we shall outline in Chapter 5, our professional education programs both at undergraduate and postgraduate-entry levels are underpinned by the same core graduate attributes; they reflect the same commitment to 'education' in its broadest sense, and not mere professional 'training'.

Our preferred model, then, contains the vertical units of a College of Arts and Sciences and various professional schools, most offering a range of undergraduate and postgraduate education. But it also consists of a clearer hierarchy of 'horizontal' units than we have at present. Centres and institutes and similar horizontal units are crucial if we are to draw together the vertical units of the University in effective collaboration around cross-disciplinary research and education. Indeed, we argue in Chapter 6 that there is a place for a small number of really large-scale horizontal units of this type similar in scope to the Centre for Obesity, Diabetes and Cardiovascular Disease mentioned in Chapter 3. Crucial to the success of the horizontal units is a better model for their governance. Work has been proceeding on an appropriate model, not least in preparation for the Centre for Obesity, Diabetes and Cardiovascular Disease, but also more generally, and a proposed approach to the governance of horizontal units is offered in Chapter 6.

As for the governance of the vertical units in our preferred model, the College or professional schools, this would be effected by means of a board chaired by a dean. This board would consist in at least the heads of the constituent units of the College or school, but it might also include other representatives of those constituent units.

The position of dean of the College or professional school ought not to be confused with the position of 'pro-vice-chancellor' of a college that the University has known in earlier times. That position merely added an extra layer of leadership between the working academic and the Vice-Chancellor and his team, and had responsibility for setting the direction of the relevant college. But the position of dean of the College of Arts and Sciences or professional school, at least where the school is constituted of more than one existing faculty, would be constructed in quite a different way. In particular, the position would have three functions. First, the incumbent would chair the board of the College or school. Responsibility for the governance of the College or school would rest with the board: the dean would be the servant and would be bound by its decisions. Importantly, responsibility for the budget of the College or school would remain with its board. Second, the dean of the College or school would have explicit responsibility for encouraging cooperation between the constituent units of the relevant College or school, particularly around curriculum reform and academic planning. They would also have responsibility for fundraising with a focus on activities that could tie together the work of the different constituent units. In other words, they would be an agent for collaboration in education and research between those units, and their personal performance would be assessed in large part by the extent to which that had been achieved. Third, they would have responsibility for whatever administrative functions the College or school discharged under the system outlined below, but it is assumed that the administrative functions of the College or school would be relatively minor and the administrative staff of the College or school very few.

Crucially, the role of dean would probably be filled in a slightly different way in the College or each of the schools. In the second part of this chapter we propose that the Provost should usually be the Dean of the College of Arts and Sciences, and that the dean of the professional schools might sometimes also be the dean of one of the constituent units, though it would perhaps more normally be an additional role independent of the constituent units. The deans of the professional schools would report to the Provost, not least to encourage cooperation between those schools and the College, particularly in the teaching of foundational material.

More generally, under Senate, the University would continue to be governed by two bodies, the recently reformed Academic Board and the body now called the Senior Executive Group (though the latter ought properly to be renamed). The Academic Board has responsibility for ensuring the appropriate maintenance of academic standards in the University by approving new courses and, we would propose, in cooperation with the Senior Executive Group, reviewing the work of the academic units on a regular cycle. The Academic Board also has the function, as an elected body, of offering comment on, and assistance with, the academic work of the Senior Executive Group. As outlined in Chapter 3, the Senior Executive Group consists of a regular meeting of the deans, deputy vice-chancellors and directors of some University services, and seeks to bring coordinated decision-making across the faculties and to operate as a type of University 'council'. The membership of the Senior Executive Group will need to be reconsidered

carefully once a new 'vertical' structure is agreed upon. The effectiveness of the new arrangements for Senate will also, of course, be continually monitored in Senate's assessment of its own performance.

It is crucial to the success of this structure that greater clarity around resource allocation is achieved, both as regards the allocation of resources from the university-wide administration, and also within the College or individual professional school. The model that we are currently implementing for resource allocation is outlined below. But first, we should consider the issue of the structure of the University's administrative services.

2.   The organisation of the University's administrative services

A new academic organisational structure requires reconsideration of the ways we deliver administrative services. As we have argued earlier, the trajectory at the University of Sydney, at least over the last 20 or so years, has been to devolve significant amounts of administrative responsibility away from the University's central administrative units to academic units such as faculties and schools. Thus faculties offer a comprehensive array of administrative services and fund them out of their own budgets. Of course there are also major central administrative services, in part to coordinate, and sometimes supplement, the various faculty services; for example, student recruitment, the International Office, corporate communications, the Research Office, the Scholarships Office, the Student Centre, and core functions delivered through professional service units such as finance, human resources, infrastructure and information and communications technology. But our tendency over the past few decades has been towards decentralisation. In some periods of our history there have even been attempts to devolve these coordinating functions to units larger than the faculty, but smaller than the University (the experiments with divisions and colleges of the 1990s outlined in Section B of this chapter).

In the last five years or so, however, there has been an increasing awareness of the costs (both financial and in efficiency loss) of this decentralisation. Thus there have been significant efforts to develop a new relationship between central and devolved services under the rubric of 'shared services'. On the basis of this concept the University has initiated a process of integrating (or in some instances reaffirming the central authority for) key services such as finance, information and communications technology, and human resources, staff recruitment and remuneration. Faculty and school staff in these areas have gradually been transferred to the budget lines of the central portfolios, with staff allocated to teams to support faculties and schools. The key principle underpinning this approach to administration was the evidence that a significant amount of all administrative work (over 50 percent according to an audit of a sample of standard processes in different areas) involved the processing of simple transactions such as journal transfers, procurement orders, requests to advertise and so on. Thus highly qualified administrative staff often spent too much of their day doing these simple transactions. The shared services solution was aimed at creating larger 'back-office' transaction teams, with appropriate economies of scale, and then allocating back to faculties staff at higher levels of responsibility with greater expertise who could offer faculties better strategic advice, policy formation assistance and administrative and operations coordination.

The principles behind shared services are sound but the implementation has been patchy. Some of this is due to the teething problems to be expected after the introduction of any new system. Outsourcing transactions to a private provider in the area of staff recruitment, for example, did not lead to an increase in the quality of service and some faculties believed that the quality had diminished considerably. Over time, however, some gains in efficiency and cost savings have been made, notably in the areas of staff recruitment and finance. There are further improvements in the quality and cost of a number of shared services still to be achieved. Nonetheless, overall, the shared services strategy has not achieved the quantum leap in quality and efficiency of administrative services originally envisaged. It is evident that there is some inherent tension between the shared services agenda and the strength of faculty structures. A considerable number of faculties, unhappy with the pace or quality of shared service support have shifted costs (and staff) to central budgets and then back-filled with new staff to ensure that the faculty still had its own staff to cater to the specific needs of deans, heads of school and faculty administrations. In other words, duplication and overlap has been exacerbated in some areas, a phenomenon which we understand to be characteristic of the early stages of this process in organisations with a history of devolution. In the context of strong faculty structures, where faculties are responsible for so many processes and are held accountable each year for their performance, it is natural that they should seek to have their own administrative support staff. The fact that some shared services have not been rolled out with sufficient attention to the specific circumstances or distinctive cultures of the different faculties has fostered an understandable suspicion in some quarters about the efficiency of shared services, driving the tendency to back-fill. What this means, however, is that overall the cost savings from shared services have not been as significant as at first anticipated.

Moreover, there are other dimensions to the provision of administrative services that do not fall within the ambit of shared services. For example, in Chapter 3 we outlined the difficulties of duplication and waste in relation to student administration and marketing. The shared services project has not yet attempted to deal with the duplication of functions that have traditionally been regarded as faculty business. In one important area, this problem may, in the medium term, find a technological solution. As outlined in Chapter 5, the Sydney Student Project, a major initiative in the introduction of a University-wide student administration information technology system, should reduce the burden on faculty and school offices. Students will still need academic advice from their faculties, but there will be an opportunity to think through the purpose and function of student counters. The critical point here is that the impact of technology change is an additional factor driving administrative transformation at the University.

But, more generally, we believe that the 'shared services' project is one that should be pursued rigorously across the range of University administrative services and that the question should be asked of each administrative function, including those traditionally regarded as faculty business, whether responsibility for the function best rests at a University-wide level or at some other level. Work has already begun on this project.

We would, however, offer one very important caveat. For many administrative functions, it is essential that academic leaders, such as deans and heads of school, feel adequately supported by locally available administrative assistance. Our existing approach to shared

services has not always adequately recognised this. For this reason we strongly support a model of 'distributed' services for many types of administrative service for which responsibility appropriately lies with a central portfolio. Under this model, staff delivering services would have a hard line of responsibility to a central unit of which they would be part, but they may be physically located proximate to the offices of an academic unit such as the College of Arts and Sciences, a school, or a faculty, and more importantly, have a dotted line of responsibility to the head of that academic unit. Some services in the University, such as Development and Alumni Relations, are already implementing a model of this type. The crucial point is that the accountability and location of those providing administrative services of different types need not, and often ought not, simply to reflect the academic organisation of the University. There are important academic reasons for reorganising the academic structure of the University in ways outlined in the following chapter. There are important reasons for simplifying control over our delivery of administrative services. But the academic and administrative structure of the University need not, and indeed should not, simply mirror each other.

3.   The University Economic Model

Many of the less happy characteristics of our current organisational life flow from a complexity of resource allocation at two levels: first in the way in which resources are distributed from the University to the faculties, and second in the way in which resources are distributed from the faculties to their various constituent units such as schools and departments. Resource allocation mechanisms create incentives for behaviour that may or may not be in the interests of the University as a whole. A good resource allocation mechanism will set the right incentives, incentives that can align behaviour with the interests of the University. It will also ensure that every level of the organisation, from the most local to the most University-wide, understands how its own behaviour influences either income or costs, and shares in both those income and cost effects. If this is not the case, then mechanisms for resource allocation may operate to undercut a unit's ability to pursue effectively the shared agendas of the University.

The University is in the process of implementing a new Economic Model that has several key features. First, it assumes that the core business of the University is in education and research and treats only those units that engage in education and research as income-generating units. In that the University earns income from investments or from the business activities of various University-wide professional service units and portfolios, that income should in principle be committed to the development of our unallocated endowment. We have recently established a so-called 'Future Fund' as a repository for our unallocated endowment. This approach emphasises that the focus of the University-wide professional service units and portfolios is on serving the academic units of the University, and not on generating subsidiary income streams. Not a little complexity in our institutional life has been created by such ventures, few of which have created the income streams that were envisaged for them. The only exception to this principle is public funding for various University-wide initiatives within the responsibility of a particular portfolio that cannot be attributed to the work of any given academic unit. That funding should, in principle, remain with the portfolio for the achievement of the dedicated purpose.

Second, the model assumes that the income generated by a particular academic unit should, as a starting position, be fully returned to that academic unit. This principle should apply equally in the relationship of the University to its faculties and in the relationship of the various faculties to their constituent academic units. A model where academic units see, initially, the full effects of their work, will enable them to understand more clearly what activities generate the funds to sustain their operations, which will, in turn, encourage academic units to invest time and energy in activities (courses, units, short courses, summer school and so on) that they perceive bring a good return. It should also allow academic units to gain a clearer insight into the costs of any activity and thus enable them to perceive that some activities that look to be profitable are in fact unprofitable when one weighs the expenditure against the return. Thus transparency should promote a more informed and entrepreneurial culture, one where academic units can weigh up, more thoughtfully than before, the relative academic and financial merits of particular activities. In this way they can seek to maintain and improve the quality of the unit's academic work in a financially sustainable way.

Two objections might be made to a model that begins the process of allocation with this assumption. The first is that this clear understanding of the income and cost effects of particular academic decisions might cause academic units to prioritise the profitable over the academically worthwhile, and endanger teaching and research in important, but unprofitable, disciplines. This problem is partly overcome by the process of income redistribution that is built into the model and outlined below. But the objection rests on the rather strange contention that we are better off not knowing which of our activities attract, and which consume, resources. We may, and should, frequently make the decision to subsidise loss-making, but academically important, activities. But when we do so we should fully understand the extent of the subsidy, and be sure that the object of the subsidy is something that we want to support in this way. The second objection to this model is that it might discourage the cross-disciplinary collaboration we so want to encourage by setting academic units in competition for resources. The answer to this is two-fold. First, the model may actually encourage collaboration by helping academic units to see that it is often cheaper to collaborate in the creation of a shared academic resource than it is to duplicate its creation. At the moment, academic units often see the income, but not the cost, effects of such duplication. One feature of the new model is that it should attempt to be as transparent about costs as it is about income. Second, the model assumes that there will be the reallocation of resources to projects of University-wide significance in a way outlined below. It is undoubtedly the case that the point of many of these University-wide projects will be to encourage cross-disciplinary collaboration in accordance with the approach to research strategy outlined in Chapter 6.

The third feature of the model upon which we are working is that, where possible, costs entailed in the activities of a particular academic unit should be borne by that unit. This is one of the most difficult aspects of the development of the new model and one on which work is currently proceeding. It is not easy to categorise costs into different types. For example, it may be more effective to distinguish between, on the one hand, costs where the transaction costs of attributing them to the activity of a particular academic unit are sufficiently low to justify their direct allocation, and on the other hand costs where some proxy, such as a per capita charge, would be a more appropriate means of recovery. We are currently working on this aspect of the model to ensure that it neither renders the model excessively complex, nor obscures the level of costs incurred by a particular academic unit.

The fourth feature of the model is that it will involve charges levied on academic units for four purposes: to fund central portfolios and services; to create a strategic project fund to seed new initiatives of University-wide significance; to create a reinvestment fund to sustain our major infrastructure program (probably a levy for the use of space); and finally to support academic units that for a variety of reasons are deemed strategically important but unable to fund their operations either in the short term (in which case there will be a business rescue plan) or in the long term (because current higher education funding mechanisms do not make it feasible to make a particular area financially viable).

This new model should have a number of outcomes. Almost all of these arise from the increased transparency that it should lend to resource allocation within the institution. This will inevitably assist, not only in the day-to-day running of the University, but also in the strategic planning of individual units and of the institution as a whole. But we also believe that transparency in the allocation of the resources of a publicly funded institution is a good in itself.

One outcome of this transparency is that it will make more explicit than ever before the significant extent to which educational activities cross-subsidise research. This will enable us to more clearly indicate to the federal government the costs of being a research-intensive university. It will also afford the University an opportunity to assess the utility of various forms of cross-subsidy. This does not imply that cross-subsidies will cease or diminish. A failure to maintain appropriate cross-subsidies for research would be a disastrous outcome of greater transparency. It is essential for the international standing of the University, its global impact, its contribution to the public good and the quality of its research training and teaching that we sustain the health and wellbeing of our vibrant research culture. This will require significant cross-subsidy. Nevertheless, by making the fact of the cross-subsidy explicit, the new model will afford us an opportunity to insist that it is on the basis of demonstrated performance.

A second outcome is that the University will be able to identify, more easily, those areas of the University that are struggling financially. This will enable a more informed assessment of the underlying factors in this situation. Early intervention to arrest serious financial difficulties is essential. Thus we can engage in appropriate investigation to assess whether the key factors underpinning the financial state of a particular academic unit are largely within the hands of that unit (in other words the result of either poor revenue generation or inadequate cost control), or whether they rest in more fundamental challenges (such as the inadequacy of government funding or the unattractiveness of a particular discipline for fee-paying students). If the problem can be remedied, then we can partner with the academic unit to develop a business plan to eradicate the deficit over a period of time, justifying a temporary cross-subsidy. Other academic units will then know the reasons for the redistribution of resources. If the situation is not amenable to remedy within the realities of Australian higher education funding (local and international) then the University can have a serious conversation about the intrinsic worth of this academic activity (in terms of such criteria as academic significance, cultural significance, research impact or national and international contribution). If the assessment is positive then, this will justify long-term cross-subsidy and all parts of the University will have committed to sustaining this unit, know the reasons for it, and have some idea of the level of the cross-subsidy.

A third outcome is that the model will make explicit the fact that all academic units have to contribute to the creation of a reinvestment fund to finance major infrastructure projects and ongoing maintenance and refurbishment. There is some appeal to this contribution operating as a levy for the use of space. At present we have no equitable means for allocating and reallocating space to different parts of the University. Much of the current allocation is based on historical patterns of occupation, and opportunism in the occupation of space. Thus we have some academic units that have become smaller over the years but still occupy an old space envelope, and others that have grown significantly larger but have no new space to support this expansion (threatening their capacity for further growth in areas such as research and research training). Space charges are unlikely to free up individual offices or small groups of offices (because the costs of supporting a small cushion for future expansion will probably not be prohibitive and prudent management suggests if one has space one should keep it). Nonetheless, it might give us a lever to reallocate whole floors (even multiple floors) if academic units see an opportunity significantly to improve their budget bottom line.

A fourth outcome is that the model should make central portfolios more responsive to the needs of academic units. Each year the proportion of faculty budgets allocated to support central services and portfolios would be up for renegotiation. In this context deans and heads of school would have an opportunity, in conjunction with the central budget team (consisting of the Vice-Chancellor, the Chief Finance Officer, the Provost and three deans) and the Senior Executive Group as a whole, to discuss whether charges for central services should be increased (to fund more services or more staff to improve the quality of the service), reduced or maintained at the same level. This is an area where robust exchange is likely, but a proper environment for assessment of performance is essential to maintain good central services and portfolios. Using annual budget discussions to focus this discussion is a useful mechanism to sustain quality.

Finally, the new Economic Model will make explicit, for the first time, that there is a defined strategic purposes fund to seed major new initiatives. Again faculty deans and heads of school will be part of a broader budget conversation, not least in the Senior Executive Group, about the core purposes of that fund and its size. At present the nature and extent of strategic funds is opaque, meaning some faculties draw on it more often than others because they have a tradition of using it, while other faculties are unsure of whether it exists and how to access it. Again greater transparency is the key for more informed decision-making regarding the strategic allocation of such funds.

4.   Using the new structure as a vehicle for achieving change

The model for the reorganisation of the University proposed in this chapter has, therefore, three crucial parts. First, it depends upon a clearer structure of both 'vertical' and 'horizontal' academic units. Second, it requires that University administrative services be reformed to reduce duplication and increase coordination along the lines of a 'distributed' services model. Finally, it requires rules as to resource allocation that are both clearer and better aligned with the overall good of the University. We believe that this reorganisation is essential if the University is to be positioned to face three crucial challenges: the challenge of curriculum reform and improving the student experience; the challenge of maintaining and strengthening our disciplinary base, while building

critical mass in key areas of cross-disciplinary activity; and the challenge of releasing resources to invest in staff in an era of greater international competition and to invest in our ageing infrastructure.

In particular, we are keen that the boards of the 'vertical' units of a simplified academic structure should be given the important task of applying our statement of strategic purpose as a test to what they do. For this reason, it is crucial that the 'vertical' units of the University be of a significant size. Within a smaller disciplinary community, it is all too easy for special pleading to preserve existing entitlements and for individual activities to avoid facing the logic of their academic and financial performance. But within a larger decision-making group, informed by clear evidence of the academic and financial performance of constituent units, and with difficult decisions to be made about, for example, the extent of cross-subsidy that might be offered to one constituent unit by the others, the question of the extent to which a given activity contributes to the achievement of our strategic purpose becomes unavoidable. The key to planning our size and shape, and to focusing our activities on those that really do achieve our strategic purpose, is to empower cognate academic communities to hold one another accountable both in terms of academic quality and financially. At the University level, this can happen through the deliberations of the Senior Executive Group and, in a different way, the Academic Board. At the next level in the structure it should happen in the boards of the 'vertical' units (in our preferred model, the College of Arts and Sciences or professional school). It is this discipline of peer critique on the basis of clear information about both academic and financial sustainability that has been missing in the University during its period of enormous expansion over the past few decades.

It is important to emphasise that this process is likely to focus the activities of the University in two ways. First, over time, it will undoubtedly mean that we cease some of those areas of teaching and research that are unable to justify their place in an institution committed to our statement of strategic purpose. The best forum in which to test what, if anything, we should stop doing, is one involving a group of broadly cognate disciplines. There are undoubtedly some areas of teaching and research that would be better left to other universities and we are keen to advance our strategic planning in conjunction with other higher education providers. Second, the statement of purpose will give us a means, within the fora provided by these fewer 'vertical' units, for the more robust testing of proposals before we expand into new areas of activity. In both these ways, the tendency of the new structure should be towards focusing, rather than expanding, our activity. It is also within these units, with their particular understandings of the disciplinary context, that decisions can best be made, for example, about the relative balance of postgraduate and undergraduate programs, and international and domestic students, as each unit searches out the most promising students, in line with its need to be financially sustainable. A simplified structure involving fewer 'vertical' units seems crucial to the ongoing ability of the University to develop strategically.

B: A possible blueprint for the 'vertical' units

1.   Introduction

In considering any possible model for the 'vertical' units of the University, three things need to be borne in mind. First, our current faculty structure is culturally strong but not inevitable. This is true both as regards the number and organisation of the faculties, and of the constituent units within the faculties. A quick comparison with other Australian universities confirms that fact. In the current higher education context, Sydney has more faculties than any other Australian university (Melbourne has 11, plus Melbourne Business School and the School of Graduate Research, Queensland has seven, the University of New South Wales has eight, plus the Australian Defence Force Academy, and Monash, the largest university in Australia, has 10). Similarly, arrangements within faculties vary considerably. For example, at the University of Sydney, geography and psychology are in Science, and criminology in Law. At Melbourne University, geography and criminology are in Arts, and psychology is in Medicine. In other words, there is nothing essential in our current structure: it has the virtue of existence but other universities of international renown lack many disciplines we offer, and arrange their disciplines and cross-disciplinary programs in very different ways. To venture reform in the structure of the University of Sydney is not to break with tradition, but to accept that the University has changed remarkably since its inception and may need to change further to equip it to remain a leading international institution of higher education. Moreover, any proposal for change should not simply reify the existing faculty as the basic unit of organisation. We should be prepared to look more radically at the appropriate arrangement of academic groups from across the University, even if this involves splitting some current faculties.

Second, the University has a recent history of reorganisation. We are aware in making these proposals that there have been successive efforts to reduce the complexity of our faculty structure, and to overcome the challenges created by that complexity: efforts to minimise overlap, to provide better coordination and to streamline administrative services and decision-making. Thus in 1991 the University was organised into four academic divisions, and in 1996, three colleges (Health Sciences, Science and Technology, Humanities and Social Sciences), before an abortive attempt in 2006 to create an unspecified number of clustered faculties under the direction of executive deans. This is not the place for a detailed historical analysis of those attempts, though we do believe that they were hampered in part by a failure to address appropriate governance, administrative and resource allocation arrangements. In particular, earlier reorganisations effectively left existing faculty structure and functions in place, and imposed an additional level of administration and decision-making. We believe that the arrangements outlined in the first part of this chapter avoid that pitfall. The fact that the University has failed to achieve a satisfactory solution to the problem of organisational complexity is a sobering reminder that reorganisation poses genuine risks. It is clear that we are operating in a context in which cynicism is high. If reorganisation were to fail again, or to introduce a structure that faculties sought to subvert rather than embrace, then this could put back the institution many years. However, the question of a large and complex faculty structure would not go away. That reorganisation has been attempted before is testament to the recognition, strongly acknowledged in our consultations, that the current structure is unsustainable.

Third, while we strongly commend to the University a structure involving a College of Arts and Sciences and professional schools, the precise shape of the College and individual schools is something that should be the subject of debate during the consultation process. In the following section we propose what we believe to a desirable configuration, and raise specific questions about that structure for consideration. But the eventual shape of the College and schools must be determined primarily by academic considerations and we are keen that during the consultation period both individuals and academic units collectively consider the possible advantages of different configurations. Of course, some structures are more justifiable than others, but our discussion of the preferred model evinces our awareness that there are several possible combinations of disciplines that could be effective to create critical mass in currently dispersed disciplines, facilitate curriculum reform, eliminate unnecessary duplication, and enable administrative efficiencies.

2.   Our preferred model

In arriving at a preferred model for the academic organisation of the University, we considered four possible models. Each of these was discussed with the current faculty deans and each was the subject of financial modelling. The first three were: a 'divisional' model common in Australia, the United Kingdom and mainland Europe; a model involving a College of Arts and Sciences and professional schools common in North America; and a model similar to this second, but with the addition of a division devoted to research and research training found, for example, at the University of Chicago.

Our preferred model is a distinctive structure that draws on elements of both the North American system of a College of Arts and Sciences and professional schools and the UK and European divisional system. We believe that it recreates the Rev. Dr John Woolley's foundational vision for the structure of the University. The major elements of this model are outlined in the following two paragraphs and explained further throughout this section. Remember that we have no attachment to any of the names that have been given the vertical units of this description and that an important issue for the further development of the model will be the units to which terms such as 'faculty' should be attached.

First, the new structure would contain a College of Arts and Sciences. This would consist in either three or four faculties (Arts, Science, and Education and Social Work; Arts, Social Science, and Science; or Arts, Social Science, Education and Social Work, and Science). In either case, we argue that the general social science activities of the Faculty of Economics and Business (such as the disciplines of Economics, and Operations Management and Econometrics ('Econometrics'), the Graduate School of Government, and the Centre for International Security Studies) should move to the College within a general social science grouping, as should the Agricultural Economics group from the Faculty of Agriculture, Food and Natural Resources. The Faculty of Veterinary Science and the Agricultural Science activity of the Faculty of Agriculture, Food and Natural Resources might also move into the College. Each of these possibilities is discussed further below.

Second, under the preferred model, there would be five professional schools. These would consist in a School of Business, a School of Law, a School of Creative and Performing Arts, a School of Medical and Health Sciences (Medicine, Nursing and Midwifery, Dentistry, Pharmacy and Health Sciences), and a School of Engineering, Design and the Built Environment (Engineering and Information Technologies, and Architecture, Planning and Design).

One possible version of this proposed organisational structure is represented in Appendix 10, with some preliminary analysis of different revenue streams. This analysis indicates that all but one of the units would have a sound financial basis, and a plan for the support of that unit would have to be developed under the principles of the University Economic Model. Each of the elements of our proposed model should be considered in turn.

The College

The College of Arts and Sciences is a crucial (and perhaps the most radical) piece of this proposed structure, and the benefits and shape of the College as a proposal merit further explanation. First, many of the faculty deans saw it as a powerful educational message to send out to the wider community: one that embraced the principle of a generalist education as foundational, while remaining committed to a focused, responsive and research-enriched education in key professions of national and international significance. Moreover, the College model embraces a vision that seeks to bridge the divide between CP Snow's 'two cultures', bringing together, in potentially fruitful alliance, science and the humanities and social sciences, creating opportunities for cross-disciplinary collaboration in research and teaching. We believe this is a vital foundation for building relevant curricula, research training and research programs in the 21st century.

Second, some of the most significant problems of current overlap and duplication are apparent in these generalist faculties. A College structure will provide a basis for greater collaboration and possible amalgamation of currently disparate units to generate greater critical mass in such key fields as sociology, social policy, linguistics, ethics and history and philosophy of science.

Third, the College would ideally provide a forum for curriculum reform, a single point of administrative contact for students, and a simplification of degree resolutions to improve the student experience. This would greatly enhance our education offerings by tackling the problems associated with our generalist degrees outlined in Chapter 5.

Fourth, a College that incorporated key social science disciplines from Arts, Education and Social Work and some elements of Economics and Business, affords the University a greater opportunity to enhance its standing and impact in the area of the social sciences. As outlined in Chapter 4, the University has a significant number of social scientists, but they are widely scattered across many faculties and as a consequence there is overlap and duplication in curricula and research, key gaps in social science expertise because of these overlaps (particularly in some quantitative social sciences) and a lack of research collaboration. Creating a larger grouping of social scientists, particularly bringing together sociology, political science, anthropology, education, social policy, social work, and possibly economics and econometrics, would afford more opportunities than at present to generate critical social science capacity.

Fifth, a College model might also allow an opportunity to build greater capacity in the life sciences. Again this is another field of considerable strength at the University, but one that is not achieving its full potential. As outlined in Chapter 3, much of our life science capability is spread across the faculties of Science (in two schools – Biological Sciences and Molecular and Microbial Sciences) and Medicine (especially in the School of Medical Sciences). While a College might allow some reconsideration of the relationship between Biological Sciences and Molecular and Microbial Sciences, it does not resolve the question of whether there should be greater integration of these two schools with the School of Medical Sciences in Medicine. From the perspective of life sciences at the University, such integration has considerable merit. Nonetheless there are a number of issues to consider in assessing the feasibility of this idea. One of the questions for further consideration is whether Medical Sciences should transfer to Science to help create a large life sciences school in the College structure. An alternative might be to transfer Molecular and Microbial Science to Medicine. In either case, it is essential that grouping the health disciplines together into a professional school does not isolate them from the life sciences in the College and that ways of maintaining, and indeed strengthening, the links between the two be explored. In particular, the function of the 'horizontal' units such as the Centre for Obesity, Diabetes and Cardiovascular Disease will be crucial in this regard.

It is important to acknowledge that a generalist College structure leaves some questions unanswered. One of the most pressing is the best context for the Faculty of Veterinary Science. On balance we do not see it as feasible to have a separate professional school of veterinary science. Although the faculty has a strong professional training focus, it has a small student base and considerable research linkages, and potential teaching linkages, with the faculties of Science and Medicine. The question that we need to resolve in the next phase of consultation is whether it would be better to place veterinary science in the College as a part of Science, or in the School of Medical and Health Sciences. Factors in favour of a Science grouping are the strong research links with Science, in particular Agricultural Science (assuming that it too moves to Science under this model) and Biological Sciences. More importantly, there will be even more teaching and research collaboration with both these schools as the University develops the Camden Campus over the next few years (the Faculty of Veterinary Science will concentrate much of its teaching in the final two years of the degree at Camden). On the other hand, there are also major research collaborations with Medicine that might become stronger with the development of the Centre for Obesity, Diabetes and Cardiovascular Disease. The decision on where best to situate Veterinary Science is an interesting question for the development of the model.

A second question is the rationale for the transfer of parts of the Faculty of Economics and Business to the new College structure. The answer with respect to the Graduate School of Government and the Centre for International Security Studies is reasonably straightforward. These centres are largely political science units and with the transfer of Government and International Relations to Arts in 2008 it seems logical to collect these key political science, public administration and international relations groups together.

The issue of Economics and Econometrics is more controversial. On the one hand, there are traditional linkages between these disciplines and the business disciplines in the current faculty. The business disciplines benefit from the broader social science training

and larger theoretical and conceptual basis these disciplines provide. Many graduates in economics go on to have careers in business. On the other hand, many of the business disciplines have appointed economists relevant to finance, marketing and accounting over recent years and thus have in-house economics and econometrics expertise. It therefore seems important to us both that the University retains expertise in some types of economics within the Business School, and also that it brings the quantitative skills of the economists into closer contact with the work of the social sciences more generally by bringing our economists and other social scientists together into the College structure.

A third question is whether one of the constituent units of the College should be a new faculty, drawing together its social scientists. There are arguments for and against such a proposal. In favour, is the notion that a separate faculty might raise the profile of our work in these disciplines, and lead to greater coherence and collaboration between them, harnessing the disparate entities that we have in the social sciences to drive research and teaching. It would also facilitate strong relations with the external public policy community. This argument would have more weight if Economics and Econometrics were in the College. Those who argue against a separate faculty of social sciences claim that it might introduce what they see as an artificial division between the humanities and social sciences. One of our strengths at the moment is arguably the porosity of the boundary between these two fields. For example, there are emerging teaching and research strengths (including cross-appointments between departments) in human rights and democratisation, which cut across disciplines such as government, sociology, history and philosophy. It might seem odd that we should, at the very time at which we are seeking to break down faculty barriers, potentially create new ones. One solution might be to have a large school of social sciences or two schools (Social and Political Sciences, and Economics) within the Faculty of Arts. We could also add to the profile of the social sciences by incorporating the term into the title of the College. This remains a question for further consideration.

Regardless of the final shape and configuration of the social sciences in this proposed College of Arts and Sciences, the creation of a more substantial and more coherent social science grouping within the College offers considerably more critical mass in this field than before. As a consequence, the rationale for the establishment of the Institute of Social Sciences is somewhat weakened. One consequence of going down this organisational route is that we would probably close the Institute of Social Sciences, the aims of that institute being, in part, met by the College.

A fourth question, related to this third one, concerns the Faculty of Education and Social Work. This could either be a professional school or a part of the College. In either case, there is some argument that parts of the faculty should be brought together with other social science and humanities disciplines in the College. As for the question of whether the faculty should be a part of the College or a separate professional school, we believe that it should be within the College. This is not least because all its courses require students to take some units of study within the faculties of Arts or Sciences or the social science disciplines of the Faculty of Economics and Business.

As for the question of whether any constituent parts of the faculty should move within the College to the Faculty of Arts or any possible social sciences grouping, we believe that this should be a question determined by the College itself. The Faculty of Education

and Social Work has a major professional focus, producing qualified teachers and social workers, meeting vital national labour force needs. However, both situate this professional practice education within larger social, political and cultural contexts, which is why this faculty has strong affinities in both education and research with other major generalist faculties. It is for this reason that many parts of this faculty replicate disciplines offered elsewhere in the University (history, sociology, linguistics, psychology, social policy and others). Moreover, some of the leading social scientists in the University are in Education and Social Work but students in other faculties, notably Arts, are unable to access this expertise because the curriculum framework in Education and Social Work is not conducive to large numbers of enrolments from other faculties. There may therefore be a strong incentive to amalgamate many of these overlapping disciplines in the College, bringing together the groups from Education and Social Work with other social science and humanities groups from around the University.

There would, however, be important potential risks to adopting such a strategy. Creating larger disciplinary groupings, which then offer service teaching back into education and social work degrees, might fracture the immersion of these social scientists in the actual practice of education and social work. At the moment the integration of social science, humanities, pedagogy and practice-based learning creates a cutting-edge curriculum in these areas. Service teaching might undermine this relationship. The issue is therefore how we balance the imperative to reduce duplication and overlap with the need to keep our education and social work training at the forefront of developments in these fields. There is no easy answer. One possible solution is to structure a system of conjoint appointments across the College, where many staff in the larger social science groupings are 0.5 in one of the schools in Arts or Science and 0.5 in Education and Social Work. This would create a larger pool of scholars engaged with developments in education and social work, while still building capacity in the social sciences more generally. This is a consideration that merits much greater deliberation. We propose that the faculty should be included in the College in its current form, and then the issue of the relationship between the social sciences and humanities inside and outside the faculty be addressed in greater detail.

One final question regarding the proposed College concerns its academic leadership. As outlined in the first part of this chapter, we propose that the College should be governed by a board, the composition of which is to be agreed. This board would be chaired by the Provost who would, at least for the first few years of its operation, also act as Dean of the College. In some manifestations of the college of liberal arts and sciences model, there is a college dean and no deans of constituent units such as Arts or Science. We could exist, as do many North American universities, with a series of heads of school reporting to the Dean of the College. For a number of reasons we have not taken this option. Science and Arts have strong brands and great traditions and undermining those would be fraught with risk. Moreover the complexities of contemporary research and teaching in the humanities, social sciences and sciences requires a mastery of very specific technical, theoretical and conceptual languages. Given the multiple constituencies with which any university to deal, it would be difficult to find one person who could speak with authority across all these audiences. In the North American context, heads of schools and departments undertake much of this communication work, and this is feasible in the Sydney context. Nevertheless, in the Australian higher education system traditional hierarchies favour the decanal role over that of head of school, in terms of

public perception and participation in broader cross-sector lobby groups. Given these considerations, we propose that the constituent units of the College should retain their clear identities as constituent units, with deans as the major leadership position for each. The Provost, as chair of the board of the College, will have the opportunity both to work with the board for the reforms outlined as necessary in the College, and to create links between the College as a whole and the professional schools.

The professional schools

In addition to a substantial College of Arts and Sciences, we have proposed five professional schools of varying sizes. A key criterion for the formation of these schools has been academic coherence. In general we are strongly opposed to the creation of omnibus schools or divisions for the sake of creating units of sufficient and relatively uniform size where the linkages between the constituent parts are tenuous. Nonetheless we are also well aware that many faculties have multiple possible linkages. The professional schools map could be drawn up differently. Our reasons for proposing each of these professional schools is laid out in the following paragraphs.

As for the School of Business, over the last decade the Faculty of Economics and Business has developed a world-class business grouping. It is possibly the leading business school in the country and one of the best in the region, a fact recognised by its prestigious international accreditations (for example EQUIS and AACSB). Much of the student and staff growth and research performance of the faculty in the last decade has been driven by the business disciplines (accounting, finance, marketing and work and organisational studies). The international business school market is becoming increasingly competitive and the faculty will have to respond to rapid changes in the marketplace over coming years. This will be more feasible if it is a focused School of Business rather than a comprehensive economics and business faculty, with multiple missions and constituencies. Even if Economics and Econometrics remained in the faculty, the faculty needs to focus even more on highlighting the business school dimensions of its strengths in order to thrive in an increasingly competitive environment. There would be merit in changing the name of the faculty even if economics and econometrics remained.

Incidentally, in making the proposal for a more focused business school, we are not suggesting that the school should change from a comprehensive educational mission reaching both undergraduates and postgraduates to a graduate school of the type favoured by some North American, UK and mainland European, and Australian universities. In this market, a graduate school does not offer adequate economies of scale or a sufficiently diversified student and staff base to be world-class. Most of the best of the Asian business schools are comprehensive undergraduate and postgraduate faculties. In our view a comprehensive business school is the best model for ensuring that our business disciplines achieve their potential in terms of research, teaching, professional education and international standing.

As for the School of Law, there is a temptation, given the size of the Faculty of Law, to consider amalgamating it with another faculty. On balance we do not think this is in the best interests of Law. This in part relates to the specific attributes of the Sydney Law School as it has evolved over the last century. Ours is a faculty that has very strong linkages into the legal profession and particularly the major Sydney law firms. It has particular strengths in doctrine, although these are supplemented by expertise in

broader legal studies, including criminology, legal history, and legal philosophy. The strong doctrinal focus of the faculty suggests that a place in the College of Arts and Sciences would be inappropriate and there is no other professional school into which the faculty logically fits. In some universities, law finds its place in an academic unit with business, but this amalgamation is often artificial and would particularly be so at Sydney given the traditions of our Law School. On balance our principle of academic coherence suggests that Law should retain a separate professional school identity. The interesting comparison here, of course, is with the Faculty of Education and Social Work. The difference between the two faculties is that, on balance, work in the general social sciences is a more important part of the work of the Faculty of Education and Social Work than it is a part of the work of the Faculty of Law.

As for the School of Medical and Health Sciences, it would be a grouping of Sydney Medical School, Sydney Nursing School, the Faculty of Dentistry and the Faculty of Pharmacy. We also propose that the Faculty of Health Sciences join this grouping, although while ever it remains at Lidcombe, substantial administrative services would still need to be delivered at that campus. Each of these faculties plays a major role in producing the future health workforce for the nation. All share a curriculum with a strong clinical training component. In some instances their facilities in hospitals are co-located. All share a curriculum that has elements of foundational life sciences. All (except Pharmacy) have close relationships with area health services (although even for Pharmacy a relationship will increasingly develop with the growth of hospital pharmacy as an area of practice). Thus there is much to be gained by bringing these faculties into a closer alliance. There are potential economies of scale both in teaching and administration. There are also further potential research collaborations that can be facilitated by being in one large professional school structure. The great danger of a professional school in this area is the risk noted above, that it will weaken the relationship between the Faculty of Medicine and the life sciences in the College. We do not, however, regard this danger as inevitable.

As for the School of Creative and Performing Arts, both Sydney College of the Arts and the Sydney Conservatorium of Music could conceivably be placed in many different configurations. They could be part of the College of Arts and Sciences (although most probably as schools within a larger Faculty of Arts), given that many staff in these faculties are scholars in the humanities and much of the curriculum is relevant to a humanities curriculum. There are other possibilities. Sydney College of the Arts might be a good partner in a larger 'design' group, providing a critical creative and visual arts perspective on design problems. In other words there would be linkages into computer design, information technology and from there into architecture, design sciences and possibly engineering. There are also ways in which a focus on creative and performing arts links Sydney College of the Arts, the Sydney Conservatorium of Music and parts of Architecture, Design and Planning. Indeed there has already been some fruitful discussion about such a grouping, and a 'horizontal' unit around either design, or creative and performing arts, might be an interesting way of drawing together these threads. However, on balance we see most potential for the Sydney College of the Arts and the Sydney Conservatorium of Music in a creative and performing arts grouping (and a stronger linking of Architecture Design and Planning to Engineering and Information Technologies). Sydney College of the Arts and the Sydney Conservatorium of Music share much in common as creative art disciplines: a focus on performance practice, visual

culture, creativity and making distinct creative works. They sit in the same Australian Research Council panel ('Humanities and Creative Arts') and have common research objectives, in particular achieving adequate recognition for creative work as a form of research practice. Thus there is significant overlap in orientation, focus and shared research concerns. The only impediment to the closer working of these two faculties is the not inconsiderable geographical distance between them.

As for the School of Engineering, Design and the Built Environment, this group would bring together the faculties of Engineering and Information Technologies and Architecture, Design and Planning. There is already considerable overlap and collaboration between these two faculties. For example, both faculties have major computer design strengths in teaching and research. Architecture, Design and Planning has a significant architectural science and engineering element. More generally there is an increasing convergence in the disciplines in these faculties around questions of design and considerable potential for fruitful research collaboration (and, in this field, research collaboration with Sydney College of the Arts). The one discipline in this grouping that sits somewhat outside this framework is urban planning. This is an important area of social science and there would be a case for transferring this discipline to the College of Arts and Sciences to sit in a social science school. On the other hand, urban planning is also a design discipline and is well integrated into the larger architecture and computer design group in the existing faculty. On balance, we believe it makes sense to keep it in this grouping.

A central issue for the implementation of our preferred model in relation to the professional schools, indeed one raised more than any other in our preliminary consultations, concerns academic leadership. As outlined in the first part of this chapter, we are convinced that each school will require a slightly different approach to the question of academic leadership.

With respect to those professional schools that are essentially one-faculty schools – Business and Law – the role of dean remains as at present. Deans will oversee the disciplines in the faculty and provide essential leadership and management oversight. The governance of these professional schools will be according to existing constitutional arrangements, though this would be an appropriate moment for those faculties to review their constitutions. The deans of these professional schools will report to the Provost as they do now. Nonetheless, it is essential to also redefine key elements of this role for this structure to work. Currently the main focus of deans is to ensure the health and wellbeing of their faculty, to monitor particular performance indicators in teaching, research and community outreach to ensure that the faculty remains an outstanding, world-class academic unit achieving national and international goals and objectives. This is important but in the changing context of international higher education, where cross-disciplinary research and teaching is becoming an increasingly important element of success, collaboration across traditional academic structures is going to become vital. In this context we need to adapt some of the governance philosophies outlined in the divisional model. A key performance indicator for deans in the professional school structure, one monitored by the Provost, will be the extent to which they collaborate with other deans and the Provost to build effective cross-faculty collaborations in teaching and research. Their performance will be in part measured by their capacity to achieve the goals and aspirations of the University as a whole.

As for the multiple faculty professional schools – Medical and Health Sciences, Creative and Performing Arts, and Engineering, Design and the Built Environment – these schools should each be governed by a board, the composition of which remains to be agreed. The critical issue is whether the deanship of each of these multiple faculty schools is a position independent of, or rotates among, the deans of the constituent units. In either case, the dean of the professional school would in that role be the servant of its board as regards the work of the school, and would have responsibility to foster collaboration both within the school itself and across all the other academic units in the University. But whether the deanship of each school is an independent role is open for discussion in each case. There are advantages and disadvantages to both options. A new decanal role would be an additional and perhaps unnecessary layer of leadership (and expense). On the other hand a rotation system potentially fosters a conservative academic culture, where deans are reluctant to encourage decisive changes for fear that in the next rotation their interests might be under attack. There would also arguably be a conflict of interest in a dean who has simultaneously to advance the interests of their own constituent unit, and that of the school as a whole, and if this model is adopted it might be important to have appropriate representation of the relevant constituent unit on the board of the school in addition to the dean themselves. These questions will need to be resolved for each proposed school in the next phase of consultation.

We believe that a structure of academic organisation for the University with fewer vertical units is essential to meeting many of the challenges outlined throughout this Green Paper. The precise design of those vertical units is something to which we are less committed, though we believe that our preferred model has much to recommend it. The design of the vertical units is a question, in part, of the academic shape that particular disciplines within the University would like to take over the next period of their life. It is our aspiration, therefore, that the conversation around these issues in the University and beyond, will focus primarily upon that academic question: the question of which disciplines are most appropriately brought closer together as we attempt to facilitate greater cooperation in teaching and research.

The broader vision outlined in this chapter is one that we believe can bring about much-needed change. It is one of fewer vertical units; clearer rules for the operation of horizontal units; a system of resource allocation that better aligns the interests of the University and the interests of individual academic units; and appropriate governance and leadership structures for the College of Arts and Sciences, professional schools and University as a whole. Having outlined our strategic purpose, the context of our planning and the work in organisation change that we believe to be pressing, we turn to the heart of all we do, to our vision for education and research and the ways in which we believe that we can achieve our vision for them.

CHAPTER 5
THE MOST PROMISING STUDENTS

The University of Sydney has an outstanding tradition in the education of the nation's leaders. It is no accident that so many public figures have received their university education at this University. Our students are all high achievers when they begin their studies here. We are the first-choice university for New South Wales students by a wide margin, and we are the first-choice university for many students coming to study here from overseas. This is not surprising. We have a tradition of excellence in teaching and staff committed to adding value to the experience of our students. Graduates of the University go on to make significant contributions to the future of the nation and participate as leaders in the international community.

A: The hallmarks of a Sydney education

The Sydney vision of education has five key elements. First, academically, we believe that the core function of a University is to produce skilled 'critical thinkers', people with fundamental skills in the analysis of data, in the construction and critique of argument, and in oral and written expression. A Sydney education, whether generalist or professional, and in addition to whatever disciplinary expertise or professional skills it imparts, is an education in critical thinking, in the intellectual skills that we believe can found a contribution to Australia and the wider world. This requires both breadth and depth of study, so that the student can master skills of analysis at different levels of generality. It is an approach to education that has implications for both our generalist and professional degrees.

Second, and as a consequence of this first characteristic, we believe that a Sydney education must be conducted in a research-active environment. The connection between teaching and research is one that can seem elusive, but that we believe to be critical. Importantly, it does not rely upon researchers teaching the subject matter of their research, or presenting students with only their 'latest' findings. The suggestion that it might do sometimes springs from the use of the term 'research-led' teaching. But we would prefer to talk about 'research-enriched' teaching and, indeed, 'teaching-enriched' research. It is our contention that the activity for which we aspire to prepare our students and in which they should engage during their education is the production of new knowledge and understanding. In their critical thinking, in their analysis of data, in their construction and critique of argument, they should be aspiring not merely to reproduce the thinking of others, but to contribute their own understandings of the material with which they are dealing. This is the same activity in which our researchers engage, and there ought to be continuity between the preparation of a student in the first year of their undergraduate degree and the work of the scholars by whom they are taught. If this is the case, then the research culture of the University ought to be very present in the classroom, even when the class is dealing with relatively elementary material. Indeed, it is our contention that a teacher seeking to present elementary material in new and more illuminating ways can discover insights that are valuable for their own research. It is for this reason that we would choose to speak not of research-led teaching, but of research-enriched teaching and of teaching-enriched research.

Third, because we see the student as themselves an active learner, it is important that they have some degree of flexibility in the curriculum that they follow, and in the trade-off between its depth of focus in a particular area and the breadth of its range. We have sometimes referred to this feature of our offerings as 'Sydney Choice'. The University's website boasts that: "At the University of Sydney we offer Sydney Choice – a wide range of dynamic courses with flexible degree structures. We don't believe one model fits all. We encourage you to start working towards your goal, your way, from your first day at university." However, while the notions of student autonomy and active learning are central to our statement of strategic purpose, we are also keen to ensure that the choices that are made are not unbridled, but reflect a coherent set of educational objectives. The important balance is between giving the student the freedom to follow their interests, and ensuring that the curriculum that they choose appropriately balances the depth and breadth of their learning in particular fields.

Fourth, our understanding of a student's education is holistic. That is, we are interested not merely that they develop skills of critical thinking, but that they develop the range of other graduate attributes outlined below. Moreover, we understand that the acquisition of these graduate attributes is enhanced if a student has the opportunity to participate in a range of activities on campus that are not formally a part of their degree program. In the consultation process, staff overwhelmingly told us that they believe a student's experience in student life outside the classroom is just as important a part of their education as their formal academic training in a discipline and in critical thinking. An important part of the University's proud tradition of producing leaders is its commitment to working with the student organisations to create a vibrant campus life.

Finally, at the heart of the University's understanding of its mission is the recruitment and education of the most promising students whatever their social or cultural background. This vision is one that is centrally aligned with the federal government's aspirations for higher education, especially with respect to the social inclusion agenda. It is important to emphasise that this is not an exercise in 'social engineering'. Rather, it is two things. First, it is a commitment to finding the students who can most benefit intellectually from the opportunities that the University has to offer, who can achieve the most while they are with us. In contexts of relative educational disadvantage, those students will not always be simply those who have attained the highest academic achievements measured by examination result at the point of entry. Second, it is a commitment to creating an educational environment that appropriately prepares our students for leadership in the community to which they belong. Particularly in the social sciences and humanities, the study of complex social phenomena is impoverished in a classroom that fails to reflect the cultural or social heterogeneity of the broader community. So, too, is the education of professionals to serve a diverse community.

This vision of a Sydney education is perhaps best captured in the graduate attributes endorsed by Academic Board policy. These are the attributes that we aspire to see in those who have participated in an education of the type outlined in this section. Staff of the University were pioneers in the fields of conceptualising and empirically studying such graduate attributes, and the University was an early mover in thinking through how they might be embedded in disciplinary study. The current Academic Board policy, written in 2004, requires all courses to specify how the relevant graduate attributes are embedded

in ways that demonstrate their disciplinary relevance. Three core attributes lie at the centre of the University's curriculum and co-curricular activities. They are:

> *"...1.   Scholarship: An attitude or stance towards knowledge.*
> Graduates of the University will have a scholarly attitude to knowledge and understanding. As Scholars, the University's graduates will be leaders in the production of new knowledge and understanding through inquiry, critique and synthesis. They will be able to apply their knowledge to solve consequential problems and communicate their knowledge confidently and effectively.
>
> *...2.   Global Citizenship: An attitude or stance towards the world.*
> Graduates of the University will be Global Citizens, who will aspire to contribute to society in a full and meaningful way through their roles as members of local, national and global communities.
>
> *...3.   Lifelong Learning: An attitude or stance towards themselves.*
> Graduates of the University will be Lifelong Learners committed to and capable of continuous learning and reflection for the purpose of furthering their understanding of the world and their place in it."

In particular, these attributes are outlined by the policy to involve "a combination of five overlapping clusters of skills and abilities developed in disciplinary contexts." These five are:

> *"...1.   Research and Inquiry*:
> Graduates of the University will be able to create new knowledge and understanding through the process of research and inquiry.
>
> *...2.   Information Literacy*:
> Graduates of the University will be able to use information effectively in a range of contexts.
>
> *...3.   Personal and Intellectual Autonomy*:
> Graduates of the University will be able to work independently and sustainably, in a way that is informed by openness, curiosity and a desire to meet new challenges.
>
> *...4.   Ethical, Social and Professional Understanding*
> Graduates of the University will hold personal values and beliefs consistent with their role as responsible members of local, national, international and professional communities.
>
> *...5.   Communication*:
> Graduates of the University will use and value communication as a tool for negotiating and creating new understanding, interacting with others, and furthering their own learning."

It is encouraging that the importance of each of these attributes is widely recognised in our University, and grows out of a rich educational tradition consistent with the values of the University's founding and its continuing sense of purpose. The task for the planning period is to address the range of issues necessary to ensure that this educational traditional is maintained and enhanced.

B: Sustaining and enhancing educational excellence

Achieving the vision of education summarised here is a multifaceted and ongoing task. But there are eight priorities that we should tackle if we are to sustain and enhance the educational excellence of the University. In this chapter we will deal with those eight priorities in a way that follows the career of the student from admission to participation in our programs for alumni and lifelong learning. We adopt this approach because we regard all these priorities as incommensurably pressing. They are that we must: (i) find better ways to identify promise among students drawn from under-represented groups; (ii) introduce a University-wide mechanism for the routine and systematic review of existing curricula; (iii) enhance mechanisms to ensure the highest quality of our teaching and learning practices; (iv) enhance our ability to attract and train the most promising research students (including exploring a new structure for the Sydney PhD); (v) ensure that we are meeting the distinctive educational needs of international students; (vi) develop a coordinated approach to Indigenous education (and research) for both Indigenous and non-Indigenous students; (vii) ensure the quality of the student experience, both in the dealing that the student has with the University as an institution and in the quality of on-campus student life outside the classroom, and (viii) ensure that, on graduating, the student is offered a part in the lifelong learning community of our alumni and friends. Each of these priorities should be addressed in turn.

1. Identifying students of promise

A key finding of the Bradley Report was that people from low socioeconomic status SES backgrounds are significantly under-represented in Australian higher education. A student from a high SES background is approximately three times more likely to attend university than a student from a low SES background. In this context the federal government has announced 'social inclusion' as a major policy objective and aims to increase the proportion of students from low SES backgrounds from around 15 percent at present to 20 percent by 2020.

The University of Sydney has had since its foundation a commitment to providing educational opportunities on the basis of merit, regardless of social class or financial situation. We have developed and invested in a wide range of measures to attract and retain students of promise from a diverse range of backgrounds, including an established program of financial, learning and personal support as well as orientation and transition programs. We have one of the most generous scholarship and bursary programs in the country (at a cost of over $30 million a year). However, the University is not performing as well as many other universities with respect to the 'social inclusion' objective. Indeed the University has one of the poorest records on this measure in the country, with around 7 percent of our students coming from a low SES background. Nor are we performing any better in our admission of Indigenous students and students from rural communities. In 2008 some 65 percent of new undergraduate students were drawn from the relatively affluent eastern and northern suburbs of Sydney, with only 1.05 percent identifying as Indigenous (as opposed to 2.1 percent of the NSW population) and only 7 percent drawn from regional New South Wales (as opposed to 24.7 percent of the NSW population). We believe that this pattern not only fails to meet our social responsibilities as a leading Australian university, but also impoverishes the educational experience of those students

who do come to the University. If we are to prepare students for leadership in a diverse community, and to help them think through issues that impact on wide cross-sections of the community, we can only do so in classrooms that bring together people from a diversity of social backgrounds.

Our principal challenge here relates to levels of admission. Although we cannot be complacent, the evidence suggests that our retention rates for students from low SES backgrounds, like that of other Group of Eight universities, are very good. However, entry to the University of Sydney is very competitive. More students list a preference for the University of Sydney than any other university in the state. Entry scores for many of our degrees are very high. This does mean that we tend to draw our local student population disproportionately from students from 'independent' and selective schools.

The question of equity and access often reaches much farther back into the educational system, long before students apply for admission to University. The evidence would suggest that there are systemic obstacles such as low school completion rates, low levels of academic achievement in specific schools, low levels of aspiration for higher education and peer group pressure to avoid university as a career option, which mean that students from lower SES backgrounds do not do as well in Year 12 examinations and therefore do not have the scores to gain admission to the University in the same proportion as students from higher SES backgrounds. One of the challenges for any equity and access strategy is to tackle the problem in a more fundamental fashion by assessing ways in which we might improve educational outcomes for students from low SES backgrounds from the moment they enter the school system.

We recently embarked on 'Compass – Find your way to Higher Education', a new project to raise attainment and aspiration to participate in higher education among students from low SES backgrounds. The project is a partnership with local primary and high schools and the NSW Department for Education and Training, and is supported by funding from the federal Department of Education, Employment and Workplace Relations. Through this program we are creating opportunities for teachers to develop their skills as well as a structured program to build the aspirations of students to achieve academically, hence equipping them to be competitive for entry to TAFE or a university. The program involves school visits, master classes, on-campus visits, a University blog for primary students and small-group mentoring.

Important as this initiative is in raising educational aspirations, it is unlikely, on its own, to increase significantly the number of students from disadvantaged backgrounds entering our University. This does not mean that we should abandon the Compass program. The University is committed to the long-term public good, not merely the advancement of our own specific interests, and the Compass program is an expression of this philosophy. It does mean, however, that in order to provide an environment in which students of promise can thrive and achieve their full potential we need to find more sophisticated ways of identifying them and attracting them to join us.

Like most universities in Australia we rely heavily on performance in the major Year 12 state examinations, the Higher School Certificate (HSC), for determining admission to our degrees. This is understandable given the large number of entry offers we make each year (around 10,000 a year at the undergraduate level). Thus each degree has a set entry standard, an Australian Tertiary Admission Rank (ATAR) or equivalent. For students

who have not sat the HSC or equivalent recently and may be seeking admission after a lapse of time since they completed formal studies (non-recent school leavers as they are known) the University Admissions Centre determines an ATAR equivalent based on previous examination results and sometimes other factors, such as employment record or other tertiary study results, to assess their suitability for admission.

We do give consideration to other factors and we have a variety of admission schemes that moderate public examination results and provide us with an opportunity to assess other indictors of potential. For example in areas that require special attributes or talents, such as music or creative and visual arts, audition or portfolios of work supplement examination results. Some faculties use field of study aptitude tests. We also acknowledge that sometimes health or family circumstances can impact heavily on the examination performance of individual students so special consideration and the Broadway scheme are formal means that allow students who just missed out on entry due to these factors to make a case for admission. Similarly some faculties operate flexible entry schemes, where they consider the tertiary record of students in the range five marks under the entry point to see whether there are signs of potential (for example excellent performance in subjects relevant to the faculty) that might warrant admission. Finally, we have a special admission program for Indigenous students (the 'Cadigal' scheme).

A student's ATAR score is some measure of potential and it would not make sense altogether to abandon the score in the admissions process. Yet the evidence is also very clear that once students from low SES and Indigenous backgrounds are enrolled at the University, their progression and outcomes are no different to those of the wider student cohort. Indeed this is an area in which the University's performance is much better than the sector as a whole (see Appendix 11).

The issue we are currently addressing is, therefore, that of the initiatives we might need to undertake in order to ensure that we recruit the most promising students from all social and cultural backgrounds. One thing that is clear, is that while we can make real headway on improving our levels of participation by underrepresented groups, we will be most effective in all these initiatives if we work in collaboration with the other universities in the city. For this the University has established a partnership with the other five Sydney-based universities to undertake activities in schools and the community to further social inclusion in higher education. The Sydney Widening Participation in Higher Education Forum (SWPHEF) is a unique initiative with the universities working in collaboration to support increased access and participation of students from low SES backgrounds, Indigenous students and regional students.

The following paragraphs raise some possible strategies for achieving the goal of increased participation at Sydney. Some of these strategies require considerable further development, while others could be implemented urgently.

Targets for increased participation rates

If we increased our current enrolment of low SES students by at least 50 percent this would result in an overall rate of around 10 to 12 percent. The federal government is developing, in response to the Bradley Report, a more robust measure of the SES of higher education students than it currently employs. But however it is measured, we

need to set ourselves an ambitious target such as this. We need also to ensure that the implications of such a target are understood throughout the University. There is considerable variation in low SES intakes across our different faculties, currently ranging from around 4 percent at the lowest end to more than 16 percent at the highest. The reasons for these differences are complex and raise challenging issues for our faculties, but perhaps also for some of the professional bodies with whom we work. Our faculty deans and staff have certainly not been complacent about the issues and there are some excellent initiatives taking place at the local level to improve our recruitment of students from disadvantaged backgrounds. However, the national importance of this issue provides our faculties with an opportunity to address it both internally and in conversation with their stakeholder communities. We believe that this process would be advanced by the University setting a collective target for low SES participation rates of around 12 percent, and then agreeing individual targets with each faculty as the relevant admitting unit. In using the term 'faculty' in this and subsequent chapters, we mean whatever the appropriate vertical unit might be in any agreed new structure.

An Australian Tertiary Admission Rank (ATAR) bonus system

There is no doubt that ATAR scores are crude instruments to run across such a large potential student population. The important issue for the University is to come to a more complex understanding of what 'promise' actually means. There is strong evidence that students whose families have no history of higher education participation are significantly disadvantaged in gaining access to university unless they attend schools with a broad social mix. It has been argued in the research literature that this cultural disadvantage is embedded not only in the family life of low SES communities but in the differential access to educational and social experiences that bring together different SES groups. A student who has overcome significant cultural and educational obstacles to do well might have more promise than a student who has not. Australian research has found that high-achieving students from educationally and socially disadvantaged backgrounds with an ATAR score of up to five points below that of their more advantaged peers will achieve identical outcomes from their university education. If this is the case, then it seems that treating students from more privileged backgrounds and students from more disadvantaged backgrounds equally involves acknowledging this five-point differential. We would propose that students matriculating from identified disadvantaged schools be given a five-point ATAR bonus for entry into all undergraduate programs.

Review our general admissions criteria

As outlined above, it would be foolish altogether to abandon the ATAR as an important component of our admissions process, not least given the transaction costs of many alternative admissions processes. Nevertheless, we believe that real questions do remain about the weight that ought to be given to the ATAR in our admissions process, and whether there are other indicators of academic potential that ought to be relied upon as well. These might include such indicators as: field of study aptitude tests; interviews for some courses of study; references; portfolios; more nuanced information about the context in which a student's academic results have been achieved; or other possible combinations of tools to assess potential. There are, of course, live questions about whether such tools have more or less inbuilt bias than the ATAR score. But, although

we have the schemes for individual faculties noted above, the issue of our dependence upon the ATAR system has not been explored across the board by the University, and we believe that the possible benefits of a radical reform of the admissions process should be considered.

A pathways foundation program

A University Diploma in Higher Education Studies would be one way of creating access opportunities for students of promise from disadvantaged backgrounds. A HECS-supported Higher Education Diploma could be established providing a pathway through to degree-level study at the University. In addition to tailored preparatory foundation units of study, it would be possible for students to enrol and to be examined in a limited number of degree-level courses. Successful completion of the diploma at an appropriate level, subject to published admissions criteria, would make them eligible for admission to a degree program after one year with credit for the units completed at degree level. (Experience elsewhere, for example at Monash University, has shown that over 80 percent of students completing such a foundation program subsequently accept a university place, with 45 percent offered their first choice of degree.) Moreover, the evidence from the University's own foundation program for international students has shown that over 80 percent of candidates subsequently gain admission to University of Sydney programs. (In most cases these students would have met the entry criteria at many other Australian universities before joining the program but acknowledge the added value of a University of Sydney education.) Similarly, the University has had considerable success with the University preparation courses offered for potential mature-age students through its Centre for Continuing Education. The new foundation program could also be undertaken in partnership with neighbouring education providers. We believe that we should actively explore the option of creating such a program to commence operation within a short time frame.

Local partnerships

The location of the University's campuses also provides opportunities for us to build sustainable partnerships with neighbouring schools and communities. Given the inner-city location of our Camperdown/Darlington Campus, for example, we co-exist with localities marked by high levels of disadvantage and social exclusion. We need to do more to build mutually beneficial relationships with our diverse local communities and support social assistance programs in these areas. Some of this might also benefit the University's teaching, learning and research programs. For example, these arrangements might be the platform to provide more opportunities for our students to undertake professional placements and internships, which students already undertake as part of their degrees, to support local community-based capacity building. Engagement with our local community might also assist in our aspiration to create a university that is more alive, and responsive to, Indigenous Australia. The University has already begun forging partnerships with the NSW government, particularly the Department of Education and Training, the City of Sydney, Sydney Institute of TAFE and Tranby Aboriginal College. We are keen to build closer links with the University of Technology, Sydney. We are also keen to build stronger cooperation with the local Indigenous communities. Our aspiration is to initiate a precinct-wide strategy to partner with the local community, improve local infrastructure, provide employment opportunities, broaden the experience of our students, and be

seen as a good neighbour by communities with whom we have an historic relationship. We believe that a coordinated strategy for engagement with the local community should be devised and implemented as a matter of priority.

A rural education strategy

The University of Sydney is a large metropolitan university but is actively engaged with students from rural communities in two important ways. First, as the leading university in New South Wales it is hardly surprising that students from rural communities aspire to study at the University, despite the considerable barriers that rural students can experience when moving from the country to the city. Second, the University itself is actively engaged in work in rural communities in New South Wales, including through our rural campuses. There are many faculty-based activities that contribute to life in rural communities, notably Veterinary Science (Camden); Medicine (Dubbo/Orange Rural Clinical School and Rural Departments of Health at Broken Hill and Lismore); Agriculture, Food and Natural Resources (Narrabri); and varied involvements of the faculties of Education and Social Work, Nursing and Midwifery and Health Sciences. Nevertheless, as noted above, participation of rural students in the University remains low. Over the last two years, funded by University teaching improvement grants, there has been a series of very exciting bottom-up initiatives taking place led by academics from different faculties who have established a Rural Focus Group to bring greater coordination to our activities in rural communities and with rural students. One such initiative has been the creation of rural hubs for professional student placements. There has been significant federal government funding to develop initiatives of this kind, particularly for medical training and there is ongoing interest from federal and state governments in continuing and extending these involvements. We believe we must develop a University-wide rural education strategy that draws together the different educational activities and projects that University staff have been involved in with rural students and in rural communities and sets direction for future work in this area.

An integrated education and research strategy for social inclusion

As a comprehensive university with a strong research focus we also have a platform to develop the national social inclusion agenda in a profound way, through a cross-disciplinary initiative that might advance research into the factors that shape educational participation. Such an initiative might be based around the contribution of research into policy development on social inclusion more widely. A research centre for social inclusion could draw together the important work already going on in the University into the social, economic, education and health-related aspects of social inclusion and exclusion, supporting the development of new policy initiatives together with professional and community-based intervention and development strategies. This research-based approach would also allow the University's contribution to the social inclusion agenda to extend beyond simply meeting increased targets for low SES access.

If we are to play an important role in the government's social inclusion agenda, as we must, then we will need to act on each of these proposals, as well as putting more effort into our existing programs for attracting students from under-represented groups. Being more engaged in social inclusion is essential to creating and sustaining a university in which students of promise can thrive and fulfil their potential.

2.   Improving curriculum review

The University faces two challenges in curriculum reform, both of which are amenable to a similar set of solutions. First, Chapter 3 will have made evident our need to rationalise our suite of degree offerings across the University, and especially their duplication and overlap. It will also have made clear the need to think about inconsistencies in course structures and requirements that make the movement of students between faculties more complex than it needs to be. This is an urgent task for the University and the challenge is to find the appropriate fora in which it can be undertaken in a highly disparate structure for academic organisation.

Second, curriculum reform is needed, not only at the level of the University's offering as a whole, but also in the case of many of our individual degree programs. The vision for education outlined in the opening section of this chapter stressed the need for balance between breadth and depth of study. It also stressed the need for balance between sufficient flexibility and sufficient structure in course programs, both to allow students choice and also to ensure that their overall curriculum is educationally coherent. It is not always the case that our existing course programs appropriately balance these two sets of demands. Thus we have some courses that are highly structured and that arguably offer insufficient flexibility. Other courses, however, are so flexible that students and staff can be confused about the learning outcomes that can be expected from the degree as a whole, as well as how these are embedded and developed in the component parts of the degree. At present there are, hypothetically, tens of thousands of unit combinations that can lead to some specialisations within the University. It is not clear that the enormous amount of choice that we offer on some programs at the moment is pedagogically justified.

Addressing each of these challenges in curriculum reform requires a routine, systematic, University-wide program for reviewing degree offerings. That we currently have no such system is perhaps even more concerning than the state of our curricula. It is not implausible that the lack of such a system will be seen as a weakness in the University's educational offerings by the federal government's newly created Tertiary Education Quality and Standards Agency (TEQSA). We propose that curriculum reform should be undertaken within the University in two ways and that it should be addressed both to individual programs and to the question of how related programs coordinate and overlap.

First, given that much of the current complexity arises at the intersection of the work of current faculties, we propose that the new vertical units outlined in Chapter 4 should be required, as a matter of urgency, to consider the anomalies created by the current complexity of the academic organisation of the University. As for the issue of competing degree programs, the existence of fewer vertical units should enable constituent units to cooperate in developing a coherent set of courses. As for the reform of individual programs, given that many of our large undergraduate degrees, in which those problems are most acute, would be located within the College of Arts and Sciences, an appropriate forum will exist for negotiating resolution to many of the current discrepancies.

Second, while the Academic Board currently approves the establishment of new degrees and reviews the work of faculties, it does not have a systematic program for the review of existing degrees, particularly when they cross faculty boundaries. Although many degrees in professional areas undergo regular external accreditation review, these

are not always attempting to test the same issues that might be of interest to the University. As suggested in Chapter 4, we are currently working with the Academic Board to bring existing Academic Board and Senior Executive Group reviews of faculties together into one process. We propose that the Education Committee of the Senior Executive Group, a committee which has wide representation of key faculty staff, and the Academic Board should initiate a program of degree curriculum reviews on a 10-year cycle. These could operate on the basis of self-evaluation tested by a review panel with some input from external expertise. They could relate to either one degree (as with the large undergraduate programs) or to a suite of degrees (such as master's programs in a cognate range of areas within or across faculties). In the latter case they could make recommendations, not only about the reform of individual degrees, but also about the ways in which similar degrees might better be coordinated. These reviews should also, for reasons outlined in the following section, address issues of pedagogical practice within existing courses as well as curriculum.

This program of curriculum reform would, of course, be an ongoing one and would not deliver results overnight. It would, however, encourage a culture of University-wide discussion about how our degrees not only fit together, but also effectively deliver our graduate attributes. Were this culture established, the coherence of the University's offerings would undoubtedly improve.

3.   Enhancing excellence in learning and teaching

Underpinning the University's aspirations for realising the potential of our 'most promising students', and the essential platform for building our research training capacity, are excellent learning and teaching practices. The University has a proud record in teaching and learning and its graduates, ever since the first intake, have made major contributions to society, both in Australia and internationally. Many of the quantitative measures of teaching quality rank the University high, with particularly good outcomes on indicators such as progression, retention, graduate destinations and overall student satisfaction.

Nevertheless, the indicators also suggest that our performance is patchy, stronger in some faculties than others, and weak on some indicators. For example, the recent federal government's Learning and Teaching Performance Fund (2007–09) allocated money to universities on the basis of measures of teaching performance in particular discipline clusters. While many in the sector questioned the validity of some of these measures, the evidence did indicate that the University was strong, relative to our competitors, in such clusters as humanities, education, economics, business and law, and showed strong signs of improvement in science and engineering, but was comparatively poor in the health cluster. Similarly, student surveys consistently rank our physical infrastructure as poor. Our extensive internal teaching performance measures also indicate significant differences in levels of teaching and learning performance and student satisfaction across the University (see Appendix 12).

If the University is to match its teaching performance to its statement of purpose, close attention to our systems of learning and teaching is critical. Our efforts to achieve improvement will take place in a context of increasing government scrutiny of teaching performance and quality assurance, not least by TEQSA. Accountability has been a major theme in the public policy debates surrounding higher education for over a decade.

A critical issue in accountability is prudent investment to deliver good outcomes in terms of student performance, satisfaction and ability to find a suitable place in the labour market. Again there are critics of the performance measures used, and the way the data is aggregated, and while some of these criticisms are legitimate, the inescapable fact is that governments will undoubtedly continue to distribute funds on the basis of performance to drive institutional behaviour in areas of priority and to ensure that there are measures of public accountability. The federal government's intention to do so has already been signalled by the establishment of a new funding stream for learning and teaching performance, which will replace the Learning and Teaching Performance Fund after 2010.

An essential task facing us is therefore to identify the measures needed to ensure that we continue to develop in this area, that we roll out our best practices across all parts of the University, and that we systematically use evaluation techniques to feed back from quality assurance to quality improvement. In this, we will obviously have to be mindful of the external measures designed to assess quality and allocate performance funding, but our approach should not be entirely governed by these processes. More important is a frank assessment of our key strengths and weaknesses in the area of learning and teaching and putting in place appropriate policies and procedures where necessary to continue the enhancement of student learning. There is no doubt that all the student survey evidence highlights problems in our learning and teaching infrastructure, from poor maintenance of equipment and overcrowded lectures and tutorials to the lack of major spaces for research students. Nevertheless, redressing our infrastructure shortfall will not be sufficient. Learning and teaching performance improvement involves more than just better space in which to conduct teaching.

There is much that is excellent about teaching at the University. Even a casual glance at the individuals and projects awarded Vice-Chancellor and faculty teaching awards each year (some of which go on to receive Australian Learning and Teaching Council citations and other forms of external teaching recognition) can impress with the range, variety and sophistication of teaching innovation in the University. In such areas as transition to university programs, peer mentoring, e-learning, digital innovation, and studio, workshop and performance modes of teaching, there is a vast array of exciting cutting-edge teaching taking place. Moreover we have members of staff who are major scholars in the field of pedagogy, making important international contributions to the theory and practice of learning. We are not short of innovative teaching. Despite outstanding work by staff in the University's Institute for Teaching and Learning, our critical weakness in many areas is a failure to translate best practice teaching into a broader institutional framework. Teaching innovation often remains at the local level rather than being rolled out to other parts of the University.

In other words, our efforts to improve teaching quality are at present disparate and do not easily facilitate the spread of good practice from one part of the University to another, even in contexts in which disciplinary specificity is no bar to doing so. For example, if one faculty were to introduce a particularly effective system of teaching mentoring for junior staff and to see it deliver results, whether that system spread to other faculties would largely be the result of serendipity. Until recently, we have essentially relied on the Academic Board as a forum for the propagation of best practice. The Academic Board has done a fine job over many years establishing important networks of staff throughout

the faculties in areas such as learning and teaching. But it has no formal line management function, and the response of faculties and schools to innovation in teaching and learning can vary widely.

The solution to this may rest in part with more coordinated activity in the promotion of best practice through the office of the Deputy Vice-Chancellor (Education) and the Education Committee of the Senior Executive Group, working with the Academic Board in its recently reformed role. The Education Committee now has formal responsibility for identifying best practice, disseminating it and, where appropriate, formulating policies that will ensure its adoption throughout the University. By integrating learning and teaching policy and practice into the Education Portfolio and ensuring that it is brought within the formal line management structures of the University for further consideration, we hope to ensure much greater consistency in policy and practice across the institution. The reformed role of the Academic Board is to focus on monitoring academic standards and reporting its findings to the Senior Executive Group and Senate. This should provide an additional incentive for all parts of the University to focus on continual enhancement of quality in learning and teaching. Through this means we aim to achieve significant improvements in learning and teaching outcomes.

As one example of more coordinated activity in developing teaching and learning, in 2009, on the recommendation of its Education Committee, the Senior Executive Group agreed that funding from the federal government's Learning and Teaching Performance Fund (LTPF) should not simply be passed on to the faculties as it had been in the past, but that 90 percent of the money should be passed on to the faculties on the basis of a coordinated suite of teaching development programs agreed with the Education Committee and coordinated by the office of the Deputy Vice-Chancellor (Education). The remainder of the money should be reserved for various existing University-wide initiatives to support teaching and learning. These proposals partly floundered when the government announced that the LTPF would be replaced with a new performance funding scheme from 2011 as part of its compacts framework and the funding available in the interim turned out to be considerably less than the anticipated $12 million thought necessary by the Education Committee to run an effective program of centrally coordinated, locally delivered teaching and learning improvement initiatives. Once the new performance funding arrangements are in place, however, we propose that the University should seek to set aside an equivalent amount annually through the planning period for the development of coordinated teaching and learning development activities.

In addition to these developments, we need to develop the work of individual teachers. Good learning is in large part the product of good teaching. A number of initiatives are underway in this area. The University has recently created teaching-focused roles so as to give staff time, at particular points in their career, to focus on teaching and learning, and has strengthened the possibility of promotion on the basis of teaching performance and pedagogical research. We also intend to strengthen our performance management processes to ensure effective mentoring to improve teaching performance. Other initiatives that could be rolled out more systematically across the University include peer evaluation, team teaching and continuing professional development. The latter, in particular, should be seen as essential for all staff: it is not unreasonable for our students to be able to expect their teachers to be regularly updating their professional education (not just through courses, but through approaches that support the improvement of

teaching in the classroom itself). This is all part of developing a culture, not only in which teaching and learning development is better coordinated, but also in which individual teachers are more readily rewarded for their good work, problems identified and assistance more readily available.

Finally, we need a mechanism, beyond student experience questionnaires, not only to encourage good pedagogical practice, but also to identify areas for improvement. This is not simply an issue of individual teacher performance. For example, an important question will be whether an individual course involves an appropriate mix of learning contexts and practices, such as a justifiable mix of large and small group teaching, face-to-face and electronic learning. It is our intention that the course reviews proposed in the previous section should touch, not only upon issues of curriculum, but also issues of pedagogy. This should also be a part of the ongoing program of Academic Board and Senior Executive Group reviews of the faculties.

4.   Attracting and training the most promising research students

A key role for the higher education sector is to produce new generations of researchers to serve the needs of industry and universities. Research training is essential to the health and vitality of innovation in any economy. A vibrant research training environment, one that is comprehensive and diverse is critical for an effective innovation culture. As the Cutler Report has argued "innovation pre-eminently determines our prosperity". In this context a healthy research training culture should embrace a wide range of disciplines and cross-disciplinary areas.

Attracting research students

Recent evidence suggests that Australia will face a significant research training crisis over the next decade. The number of PhD students currently produced each year will be insufficient to replace the number of academics projected to retire in the next decade, let alone meet the growing demand for research scientists in private industry. Worse, as outlined in Chapter 2, this will be an international phenomenon. Thus the opportunity to supplement domestic training through immigration of skilled migrants in many fields will be more difficult than ever before. The immediate impact of this will be increased international competition for talent, which will place a premium on universities providing a supportive research environment to foster research and research training.

As noted in Chapter 2, the federal Department of Innovation, Industry, Science and Research (DIISR) has recently established a high-level advisory group to assist it to develop a national research workforce strategy designed to address the problem of producing appropriate numbers of research students to meet the projected levels of demand in different disciplines. Relevant considerations, likely to be canvassed by this task force, include: (i) the number of postgraduate scholarships available; (ii) the level of the stipend; (iii) collaboration between institutions; (iv) student mobility; (v) more industry support for research training; and (vi) industry internships.

These are also issues that we are examining as part of a Work Slate project focused on attracting able research students. In particular, ensuring an adequate number of scholarships for domestic students is fundamental and we welcome the recent

Government initiatives on this front. However, a related issue, which requires more investment, is the number of scholarships for international research students. A significant source for our future research workforce must be promising students from overseas, but without a more extensive scholarship system and effective mechanisms to waive fees the number will remain relatively small. Adequate income support for research students is also a critical factor. In some disciplines we are already forced to top up the scholarship, sometimes as much as doubling it, to find any candidates to undertake research training at all. One of the important questions for the Work Slate project is how we can maximise our return on this investment in the recruitment of research students. In addition, we should as a matter of urgency consider the issue of joint degrees with overseas universities and whether we need to be more flexible in our approach to 'sandwich' arrangements in which research degrees are undertaken jointly at the University and overseas institutions.

Research training and the structure of the PhD

Another fundamental issue, of significance for the entire Australian higher education sector, is the quality of research student training. Here the sector has to confront some difficult questions arising from the history of the Australian system. In our view there are structural weaknesses in Australian research training culture and current government training programs to support higher degree by research in our universities. We are pleased, therefore, that the government-backed Research Workforce Strategy Reference Group mentioned earlier has been asked to examine key issues for the sector, such as the appropriate length of funding support both to institutions for tuition and to students for income support. Nevertheless, if we are really to capitalise on the potential of the 'most promising students', then tackling these issues within the University will be vital. We have begun this task with a Work Slate project led by the Academic Board, but a more fundamental restructuring of our research training than was possible within that project is arguably required to effect a significant leap in the quality of our research training.

The challenges facing research training in Australia can be traced back to our system of undergraduate education. Unlike the English system where undergraduate students concentrate on a very limited set of disciplines, or the North American system where undergraduate education tends to focus on foundational liberal arts and science studies followed by intensive postgraduate coursework programs, the Australian system encourages undergraduate students to be broadly based with an additional honours year of specialised instruction as part of the undergraduate program. The honours year, which normally centres upon a research project and thesis, comprises the primary preparation for higher degree study. Thus the honours year in many disciplines is an integral part of the research training system. The strength of the honours year is that it is focused on the production of a research-based thesis. However, it may be an inadequate preparation for a PhD because students rarely have the opportunity within the time constraints to gain any depth of experience or understanding across a wider range of methodologies and research methods other than those used specifically in doing the research for their thesis. Moreover, although the Australian system is based upon a traditional Scottish model, it is not widely understood internationally, and the status of the honours year is unclear to many admitting bodies for postgraduate study overseas. A key priority for us is to address the issue of whether the honours system is well suited to the demands of research training in the 21st century or should perhaps be abandoned.

Most doctoral students in research universities in North America undertake two years of detailed coursework study in their specific field and are examined at the end to assess their suitability for the supervised research project. In England the fact that most undergraduates have had a greater concentration of study in one field from the very beginning of their undergraduate degree also gives them the edge in depth (although they lack breadth). But even in the English system there has been recognition in recent years that more depth is required in particular disciplines as a prerequisite for research training, particularly in the social sciences, and new policies allowing an additional year of candidature (to enable more coursework) in these fields have been a positive development. In addition, many systems have introduced compulsory training for research students in areas such as research methodology, generic skills, ethics, commercialisation, planning a research program, and research grant writing. Meanwhile the University has been an active participant in discussions with other leading universities in Australia about what needs to be done to ensure that the Australian PhD remains internationally competitive.

In the light of these increasing demands, we propose the exploration of a new structure for the Sydney PhD. Broadly speaking, this should include a number of elements. First, it should include a period of compulsory training in a range of methodologies not only essential to the particular research project of the candidate, but also important to the discipline within which that research project falls. Thus, for example, students in the social sciences might expect to take compulsory methods training in both qualitative and quantitative analysis. Second, it should include some level of generic skills training of the type outlined in the previous paragraph. Third, it should include a period in which a plan for the PhD project is developed and in which an academic piece is written that could form part of the longer PhD. This plan should form the basis of an assessment as to whether the candidate can continue to the full PhD. This process could take the form of a four-year undergraduate program (including the honours year) and a four-year PhD program. It could also take the more usual form, in the internationally recognised pattern of the Bologna Accords, of a three-year undergraduate program, with a two-year master's, and a three-year PhD; or even a four-year undergraduate program with a one-year master's and a three-year PhD. Clearly any structure would need to be agreed with the public funding bodies, but our proposal would be that the University should meet the additional cost of the six-month gap between the duration of the currently available public funding for the PhD and our four-year program, however constructed. It is also essential that any structure devised creates several exit points at which students who decide not to continue to the end of the PhD can submit work for a master's or other qualification. We believe that this type of radical reconsideration of the PhD program is essential if the Sydney degree is to be truly portable internationally, and to provide adequate research training. It should be a priority for the planning period and for our discussions with the federal government through the 'compacts' process.

Enhancing standards for research training and candidature management

Whichever structure we adopt for the PhD, the core question also remains of the standards that we set for research training, standards that acknowledge disciplinary differences and yet provide research students and their supervisors with clear expectations and consistency of standards at a high level. These standards would inevitably relate both to candidature management and also to the management of

research training practices. A majority of the universities in the Group of Eight have a graduate school as, in part, an answer to these issues, though we do not. Over the years there have been widely differing views on whether the University should establish a graduate school or not, and indeed little consensus about what is meant by a graduate school and an appropriate scope for its activities.

As for candidature management and research support, in some faculties the quality of these services is excellent but this is not the case everywhere. Moreover, while faculties such as Arts, Medicine and Science have very large numbers of doctoral students, there are some faculties with only small student numbers. There are considerable inefficiencies thrown up by these differences, and it might be argued that students are disadvantaged by the absence of any central processes for the monitoring of PhD candidature, even though, ironically, the PhD is the only University award (all other degrees are awarded through faculty boards). Whether we talk about a graduate school, or a more limited graduate office (though in any case with greater scope than the current Graduate Studies Office), there are strong academic, quality, and practical arguments in favour of some sort of central function with regard to the management of applications, monitoring of student progress, and management of the thesis submission and examination process. This would in no way undermine the central academic function of the supervision of students, but it would ensure greater consistency and efficiency across the University (again recognising that there are examples where this is currently excellently managed by particular faculties) with regard to administrative procedures and the institutional responsibility for quality assurance. Moreover, as suggested in Chapter 3, centralising these services could result in significant cost savings for the University, as well as improving the quality of service for some students. We propose that the establishment of a University-wide Graduate Office be considered as a matter of priority for the University.

The management of research training practices raises similar issues as those relating to candidature management. Again there may be some oversight and quality assurance issues that would be managed centrally, but the academic expertise in respect of research training is not generic across all disciplines and is clearly best developed and delivered at the disciplinary level, though cooperation across cognate disciplines also clearly has its merits. Where the University as a whole does have a role, through the Academic Board and the Research Training Committee of the Senior Executive Group, is in respect of setting policies and standards for doctoral education and establishing mechanisms to support their implementation and quality assurance at the relevant disciplinary levels. In addition, again through its governance structures, the University has responsibility for the very difficult issue of student entitlements (for example, policies on access to resources, including study space and infrastructure needs, as well as in setting minimum supervisory standards and expectations). In these respects there is a case for the implementation of policy being overseen and supported through a centralised reporting and quality assurance process (a graduate office) but key implementation responsibilities are most appropriately exercised by the academic unit most closely engaged in supporting the actual research being undertaken by the student. A program of coordination in relation to student entitlements could effectively raise the level of provision across the University. In particular, we propose that the University, through the Research Training Committee, should at least require individual faculties to report on student entitlement to resources within the faculty and minimum expectations, appropriate to the discipline, in relation to such matters as student contact time with supervisors and feedback. The Research

Training Committee should have a responsibility for setting minimum standards in relation to both resources and supervision practices across the University. It should maintain those standards on an ongoing basis with each of the faculties. Finally the Research Training Committee could help coordinate possibilities for cross-disciplinary research-student interactions of the type outlined in Chapter 6.

5.   Meeting the distinctive needs of international students

International students are an important part of our community. Unfortunately in the Australian higher education system the recruitment of international students has too often been seen in terms of the financial benefits to institutions rather than in terms of the ways in which an international and multicultural university system enriches the learning experience of all students. Not only has too little been done to support the participation of international students in the academic and co-curricular life of universities but they have often been seen as presenting universities with a series of 'problems', as not adapting to 'our way of doing things' or as having learning difficulties because they have a language background other than English.

Our own aspirations as an international university demarcate us very clearly from such superficial, ill-informed and sometimes prejudiced views of international students and their contribution and needs. That does not mean we can be complacent. A report commissioned from Professor Deryck Schreuder as part of a Work Slate project on international student support services, points to the need to be much more systematic in our support for participation of international students (see Appendix 13). Innovation is confined to specific areas of excellence. Best practice is isolated and other parts of the University are unaware of what breakthroughs have been made elsewhere in the University that may be a direct benefit to them. For instance, we need to address the issue of whether we engage sufficiently effectively in our teaching with the life experiences of all our students. Learning is all about engagement with and through experience. It follows that we cannot expect the best learning outcomes for our international students unless we develop curricula and teaching approaches that are sensitive and relevant to their life experiences. Similarly, our support systems, both academic and welfare, need to be comprehensive and systematic in assisting students through what for many will be a strange and daunting transition. The broader project of which the report is part is therefore addressing the issue of changes to the culture of our learning community and finding structures for engaging with the experience of international students so as to maximise the benefit to all our students of belonging to a truly international university.

As a part of this approach, the report sets out a new 'architecture' for international student support. In particular, the report recommends the mainstreaming of all international student services within the portfolio of the Deputy Vice-Chancellor (Education) alongside other student services. The Schreuder report also sets out 14 specific goals for better servicing the needs of international students. Finally, the report suggests the creation of an "International Programs Committee to implement and oversight these reforms across the University", reporting to the Senior Executive Group. The Schreuder recommendations in relation to the mainstreaming of student services and the establishment of the International Programs Committee should be implemented

immediately. Its goals for better servicing the needs of international students should be considered by the International Programs Committee and, where possible, achieved over the planning period. The work that we are undertaking in increasing our stock of available student accommodation is obviously also critical in better serving the needs of this constituency.

6.   Developing a coordinated approach to Indigenous education

There is clear evidence of a systemic problem in Indigenous participation in higher education. While this problem may require some similar strategies to the increased participation of other under-represented groups, we regard it as an importantly distinct issue. The situation of Indigenous students is not akin to that of other under-represented groups. Australia's Indigenous peoples are first nations peoples with a proud history and distinct knowledge traditions. The University of Sydney sits on the traditional lands of the Cadigal people, on land that was never ceded. This Aboriginal heritage is a significant part of the identity of the University, its history and its continuing role within the community. Yet the Indigenous peoples of Australia have been systematically disadvantaged and discriminated against since European settlement. These disadvantages are not easily overcome within our society but the University does have a responsibility to play its part in challenging the consequences of our past and contributing to the future. Education is an important dimension of this reconciliation and an Indigenous education strategy must be all-encompassing in its penetration of University life and culture. This is the critical challenge that we face and unless we take it on, we shall never understand what it means to be a specifically Australian university.

The question is how to address this challenge. In 2008 the University commissioned a review of its activities in the sphere of Indigenous education. This review was carried out by a team of three prominent Indigenous leaders from universities around Australia (see Appendix 14). The report presented by the review team acknowledged the excellent work being undertaken by the University's Koori Centre and Indigenous and non-Indigenous academic and professional staff both in supporting the recruitment, retention and outcomes of Indigenous students and in supporting Indigenous researchers and Indigenous research. For instance, one new initiative that is about to be launched arises through collaboration between the Deputy Vice-Chancellor (Research), the Deputy Vice-Chancellor (Education) and the Koori Centre. A Director of Indigenous Research Development will be appointed to support Indigenous research and researchers, including research students, to build capacity in Indigenous research. This initiative will be further supported by the creation of new University scholarships for Indigenous research students and the development over the early stages of the planning period of a comprehensive strategy to support Indigenous researchers.

The Indigenous Education Review highlighted the important position of the University as Australia's first university (and indeed that of Australia's first Indigenous graduate, Dr Charles Perkins) in setting both an example and a benchmark for the Australian university sector. This does not mean that we have achieved this outcome. Indeed our honest assessment is that we still have a long way to go, but the principle is an important one and not just symbolically. The recommendations of the review team will need serious consideration by the University community.

A central recommendation of the review relates to appropriate leadership for Indigenous issues within the University. The review proposes the creation of the position of Deputy Vice-Chancellor (Indigenous Education). Whether or not this particular proposal is accepted within the University, it is clear that there is a need for senior leadership on Indigenous issues, reporting direct to the Vice-Chancellor and with responsibility not only for ensuring that the University meets the particular needs of our Indigenous students, but that we develop a coherent approach to the Indigenous education of non-Indigenous students as well. Apart from this recommendation, the review's recommendations divide into some that can be implemented immediately and some that are dependent upon a decision as to appropriate leadership, or would best be left for the input of the person undertaking that role. It is our proposal that such recommendations of the review as can be implemented immediately should be, and that a decision on the issue of leadership should be taken during the period of consultation around this Green Paper. In addition, we believe that the development of a more effective engagement with our local Indigenous community is essential to help us establish the University as one in which Indigenous culture is appropriately recognised.

7.   The student experience

In our staff consultation, the claim with which there was least disagreement from respondents related to the importance of a student's experience of the University outside the classroom and its impact on their overall education. Four aspects of that experience merit particular attention. They are: (i) the student's experience of dealing with the administrative services of the University and the extent to which they feel adequately supported by those services, (ii) the student's experience of co-curricular activities and campus life, (iii) the provision of generic skills training outside the classroom, and (iv) the possibility of creating structures for belonging in the University community that are not dependent upon either an academic program or a particular interest group (the idea of 'virtual' colleges). Each of these should be considered in turn.

The student's experience of administrative services

One aspect of the student's experience of the University that often attracts comment is the comparative difficulty of performing the relatively routine administrative tasks associated with degree candidature, tasks such as enrolling in courses. This difficulty, coupled with the complexities of navigating the requirements of different faculties outlined in the first section of this chapter, can lead to a sense of alienation from the University.

A major initiative currently being undertaken by the University seeks in part to address this problem. This is the introduction of a new student lifecycle management system, Sydney Student. This may seem to be a fairly technical project with some possible efficiencies for students as well as professional and academic staff. In fact the project is a significant investment in the student experience. As the project rolls out with a new admissions process in 2011, online enrolments in 2012, and continuing changes to procedures and process in 2013, the relationship of the student to University systems will undergo radical change. Most importantly, the system will be student-focused, rather than system-focused, and will allow students to undertake many administrative

procedures relating to their candidature in a direct interface with the online system. Not only will this significantly enhance the quality of information flow between the student and the University (in both directions) and allow the student greater control over their own candidature, it will also have important implications for the ways in which we organise our student services and structure information to the student about our academic curriculum. It will also create new career and development opportunities for student administration professionals through a greater emphasis upon customer service rather than on transactional processes. In its own right Sydney Student will change nothing. All these decisions are ones that the University and its staff and students will make through the consultations and change processes that are now being initiated. However, the fact that we are changing our student administrative system opens up many possibilities for thinking about the student experience and the organisation of our services and programs of study. The introduction of the Sydney Student system will be one of the major strategic activities of the University during the planning period.

The student's experience of campus life and student support services

In general, our educational environment, with a very active clubs and societies program, lively cultural life, excellent sporting facilities and student support services in such areas as legal advice, financial aid, health, welfare and counselling, is widely acknowledged as the finest in the country. For the last three years in a row the National Union of Students has ranked the University's student experience as the best in Australia. According to a recent survey of students concerning their choice of university, three-quarters said that the quality of campus life was a factor in their choice of the University of Sydney. Two-thirds of students were interested in becoming involved in co-curricular activities (see Appendix 15). In addition, for some students the independent residential colleges located adjacent to campus and the University-operated International House offer not only an enriching social and cultural environment, but also much appreciated educational support and pastoral care.

Nevertheless, there are genuine challenges in sustaining, and increasing participation in, this co-curricular environment. There are a number of Work Slate projects to consider these challenges, and how we might work to enhance further the student experience. These include projects on assessing the current provision of co-curricular activities at the University and suggesting improvements, and on the social, catering and accommodation facilities available to students. We propose that a project on the coordination of pastoral care facilities should also be initiated later in 2010.

The University of Sydney is still, substantially, a non-residential university. Thus some students cannot be as involved in University life as they might like. This problem is exacerbated by the realities of life for many students. Student income support in Australia falls short of real need and Sydney is an expensive city in which to live. Thus a very high proportion of students, even full-time students, have to engage in paid employment. These are facts of life for many of today's students but that actually makes good services even more important. So the requirements for a non-residential university to sustain a vibrant extracurricular environment are, paradoxically, more important than for small campuses where most students are in residence. Moreover, while our students generally have a broader network of support available to them than students on a small residential campus, the issue of the extent of the University's obligation to provide pastoral care services for students remains a live issue.

In achieving the goals of increased participation in student life and appropriate support services for students, the University must work in close partnership with the student organisations. The student organisations have a long played a major role in campus life and in the co-curricular experience of student life. They are a valuable and valued part of the University. Yet a major challenge to sustaining a high-quality campus experience has been the 2006 decision of the Australian parliament preventing Australian universities from levying a charge on all students to support services offered through student organisations (the 'VSU' legislation). Voluntary student unionism remains, despite federal government support for the principle of allowing a limited service charge, because the government lacks support in the Senate for this reform. Thus the costs of funding co-curricular services and facilities continues to fall onto universities without any corresponding increase in overall funding allocations to compensate them.

In this context the University of Sydney has undertaken, since the VSU legislation, to invest significant funds (around $9 million a year) to help support student organisations and the services they provide, as well as related services in the areas of health, welfare and counselling. This is a heavy commitment and a significant cross-subsidy from other budget areas. The University is firmly committed to enhancing the student experience through funding co-curricular activities, services and facilities. It is also committed to the principle that student activities, and at least some student support services, should be student-led. However we will need to continue to work closely with the student organisations to ensure value for money from the University's investment in these aspects of the student experience.

It is certainly the case that the University of Sydney Union (USU) in particular has borne the brunt of the cuts to funding of its activities. At the time of the VSU legislation, the University reached an agreement with the USU, an independent organisation, under which the union's commercial activities in food, beverage and retail services were expected eventually to fund its crucial work in the student organisations and events. However, the sustainability of these services has proved possible only with extensive University support, both directly and in the form of shared services. In particular, the USU carries a burden in respect of the maintenance and refurbishment of the buildings it occupies; costs which are now transferred directly to the University. Thus, the commercial operations of the union, though not unsuccessful in their own right, do not provide the income necessary to cover the costs of these wider and perhaps more fundamental aspects of its core mission. And notwithstanding the success or otherwise of the USU's commercial activities as a source of funds for student activities and events, the University recognises a more general obligation of its own to provide appropriate social and catering facilities on its various campuses for its students, staff and visitors. We are therefore working closely with the USU towards a new memorandum of understanding which will provide a sustainable basis for their ongoing funding, but which will shift responsibility for food and beverage and retail outlets to the University.

Three questions facing the University in this area therefore concern: (i) the range of services provided by student organisations that it is appropriate for the University to cross-subsidise, (ii) the checks and balances needed to allow the University to evaluate the value for money that these services provide for students while allowing the organisations to exercise an appropriate level of independence in line with their traditional roles, and (iii) the appropriate level and coordination of support services

provided to students. It is our proposal that the ongoing work surrounding these issues be continued through the planning period, and that, in the short term (pending breaking of the parliamentary deadlock), the University identifies a defined proportion of its student fee income that should be committed to these activities each year throughout the planning period.

Skills training outside the classroom

Given that many students today need to be engaged in part-time work, the University is keen to see that their paid employment should add to their overall educational experience. One strategy that the University has adopted to provide students with opportunities for work-based learning has been to set up SydneyTalent as a pilot program in supported workplace experience. Building on the University's graduate attributes and the Department of Education, Employment and Workplace Relations' Employability Skills frameworks, SydneyTalent has identified 12 competencies that describe effective and desirable workplace behaviours and form a foundation from which students can evaluate their performance in the workplace. SydneyTalent has quickly established a reputation among employers and students in adding value to the mainstream curricular activity of the University. However, despite its early success, SydneyTalent faces a number of challenges. These are, first, how we expand the operation of SydneyTalent in a cost-effective way that can provide opportunities for all students who wish to take advantage of these opportunities; and, second, how we more effectively position SydneyTalent within the mainstream activity of the University, especially in relation to the student lifecycle as a whole (including the very successful work of the University Careers Service), and integrate it more effectively into the broad extracurricular experience of University education. The oversight of SydneyTalent has recently been moved to the portfolio of the Deputy Vice-Chancellor (Education), and it is proposed that SydneyTalent be encouraged to focus on meeting these two related challenges during the planning period.

Virtual colleges

The student organisations, along with the independent colleges, play a very important role in University life. However, only a minority of students are able to experience the residential life of the University and, with the many external commitments that students have to manage, not all feel able to participate in University clubs and societies. The University therefore faces the challenge of extending to all students the spirit of belonging to a community that has been one of the very successful outcomes of the college system and of the USU and Sports Union.

One way of doing so that has been successfully introduced in some universities would be to establish a system of 'virtual colleges'. All students would be enrolled in one of a number of virtual colleges supported by a network of tutors including academic staff, professional staff and research students. Each college would have a tutorial system intended to provide support for every student independently of the academic units. Personal tutors who would be senior members of the college would be there to assist and guide students. Students in each tutor group would come from different faculties and mix domestic and international students. Tutors would be encouraged to meet regularly with their tutees to discuss their experience of the University, and students encouraged

to maintain contact with their tutors. Each of the colleges would organise events and activities to support the involvement of students in the life of the college but these activities would be managed within the college itself.

The establishment of such colleges would, however, not be without cost, and it is our proposal that we should, during the planning period, establish the extent to which such a system would find support among University staff and students and its attendant benefits and costs.

8. Membership of a lifelong learning community

When a student graduates, it is important that they identify a continuing connection with the University and that they remain, in one sense or another, a member of a lifelong learning community. The development and maintenance of that community is an important part of our commitment to education for the 'benefit of Australia and the wider world'.

The lifelong learning community of the University is not exclusive to our graduates: we recognise a responsibility to provide more general community, continuing and professional education, and to contribute to the cultural life of our city. Thus our Centre for Continuing Education had over 14,000 enrolments in 2009. Efforts are underway to coordinate better the offerings of the Centre for Continuing Education and the offerings of our faculties in continuing and professional education. Our very successful Sydney Ideas program of lectures attracted audiences of 5500 in 2009 and was only part of a wide suite of public education organised through faculties and the museums. Our museums alone attracted 78,000 visitors to their exhibitions, and 17,800 to their public and schools programs. Contribution by staff to public debate is also part of our commitment to community education. Statistics on media appearances and mentions of universities in the past 12 months indicate that the University is now one of two leading institutions in the country for public commentary. Our sponsorship of the Sydney Festival is a recent expression of our commitment to better community engagement. Our Gold Sponsorship of the Australian Pavilion at the Shanghai World Expo 2010 is an indication that we regard our community as global, as well as local. We are building an ever-stronger educational community that extends well beyond the walls of the University.

Our alumni clearly form an important part of this extended community. We have been making efforts, in particular over the last five years, to build stronger links between our alumni and the current activities and students of the University. Individual alumni are being recruited as advisers in areas of expertise, a growth plan for alumni chapters is underway; the revamped *Sydney Alumni Magazine* is receiving widespread endorsement and electronic communications form a solid base for news updates about the University's achievements and opportunities to engage. A 'whole of life' student-alumni program has been developed, including an innovative online networking community, alumni-student mentoring program and alumni families support to new international students. Our Alumni Awards Program has grown in prestige, and a strong alumni reunions program underpins an extensive events calendar, both in Australia and overseas.

This commitment to lifelong learning and membership of an ongoing community is increasingly a part of our educational offering. It fits well with our commitment to the benefit of Australia and the wider world, and can increase the opportunities available to our current students. In addition, it retains for the University the advice, support and advocacy of a wide network of friends within Australia and abroad. It is for this reason that a strategic priority should be the ongoing development of our alumni and public education work.

It can be seen from the preceding eight sections of this chapter that the University has a clear sense of its educational mission from the arrival of its students and throughout their lives as alumni. It also has a clear sense of the priorities that we must address to achieve that mission. The University undoubtedly provides an excellent educational environment and our graduates have a proud tradition of making outstanding contributions to our society. Nevertheless, all the evidence indicates that the University can do better with respect to its fundamental roles in learning and teaching and research training. There are undoubtedly significant obstacles to overcome, particularly in relation to infrastructure, but of more concern is that our performance in learning and teaching is patchy – good in parts but not consistent across the institution. We need to do a lot more with respect to valuing and supporting teaching and ensuring that best practice in this area is adopted more widely and consistently. A critical issue will be fostering a culture within the University that aspires towards higher levels of achievement in learning and teaching and rewards staff for outstanding achievements in teaching. We need to ensure that we are able to identify students of promise and then offer them outstanding educational opportunities in whichever program they choose. We need to ensure that those opportunities continue even after graduation. Some of the proposals we discuss in Chapter 4 with respect to the academic organisation of the University provide a good platform for achieving these goals. But we have to capitalise on the potential of this platform through a sustained commitment to re-examining everything we do with regard to learning and teaching to ensure that our practices accord with our aspirations.

CHAPTER 6
THE BRIGHTEST RESEARCHERS

Our vision for research at the University of Sydney is that it should build upon the Sydney tradition outlined in Chapter 1, a tradition of work that is both academically excellent and also keen to engage with the issues that most concern our society, for the benefit of Australia and the wider world. This tradition has deep roots in the University and we have produced work in a range of fields that is recognised internationally, not only for its quality, but also for the impact that it has had in improving the lives of individuals and communities. In fields as diverse as robotics, astrophysics, philosophy, history and medical imaging, the University produces research of the internationally highest calibre. Remaining true to this tradition has implications for both the kind of research in which we should be engaged and its quality.

A: The hallmarks of Sydney research

The University community values any research that makes an original and significant contribution to knowledge and understanding. Our commitment to academic excellence means that we see knowledge and understanding as intrinsically valuable.

Nevertheless, we believe that, in order to be true to our tradition, the research of the University of Sydney must strike a balance between four sets of contrasting characteristics. First, our work should have disciplinary depth and cross-disciplinary reach; second, it should include work in both established fields and in emerging areas of research; third, our work should both shape and respond to the public policy agenda; fourth, it should include the most fundamental work as well as work much closer to praxis and, where possible, support the dissemination of work of this latter kind through knowledge transfer and commercialisation. In addition, the research of the University must aspire to a particular quality.

Before outlining our principal strategies for maintaining and enhancing research of this type, it is important to consider two of these hallmarks of Sydney research in greater depth: the balance between disciplinary and cross-disciplinary research that we hope to maintain, and the quality of work to which we aspire. Each of these is crucial to our vision of the University's work.

1. Disciplinary and cross-disciplinary research

In order to pursue academic excellence and to see our work make a contribution to Australia and the wider world, we need both disciplinary and cross-disciplinary work. Crucially, this also means supporting the work of both lone scholars and teams of collaborators, for while cross-disciplinary work usually implies the latter, disciplinary work is often carried out by individual researchers. By 'cross-disciplinary' we here include both work that brings perspectives together from many disciplines ('multidisciplinary') and work that attempts to incorporate knowledge and techniques from other disciplines ('interdisciplinary'). The trajectory of research over the last hundred years has been towards greater specialisation, parsing complex scientific and social questions into more manageable forms and refining methodologies to address them. These methodologies

have been at the core of the work of disciplinary communities and they have great epistemological power. But addressing broader questions, and in particular the questions to which our society seeks answers, often requires that these various methodologies are brought together in cross-disciplinary work. Moreover, when these methodologies encounter one another in cross-disciplinary work, new methodologies are shaped and new disciplines emerge. There is thus an interplay of disciplinary and cross-disciplinary work: the latter is not possible without the former, while the former often gives rise to new, or emergent, disciplines. An appropriate balance between disciplinary and cross-disciplinary work is therefore important to be true to both parts of our tradition.

One question that sometimes arises is whether there is virtue in having cross-disciplinary teams established in the one institution. In other words, should we care whether there is cross-disciplinary work at the University, or is it sufficient that our researchers are engaged in cross-disciplinary work, wherever that work might be located?

Academics find collaborators all over the world, and the researchers of the University of Sydney are no different. Where researchers at Sydney engage broadly in collaborative research it is largely focused on external collaborations. We have relatively low levels of research grants and publications that involve more than one faculty (0–14 percent of grants for all faculties and 0–20 percent of publications, with highest scores for faculties such as Dentistry, Health Sciences, and Nursing and Midwifery for which the research tradition is relatively new; see Appendix 16). By contrast, international collaboration by Sydney researchers is impressive with some 32 percent of Sydney's academic publications co-authored with one or more collaborators from outside Australia. (The United States, the United Kingdom, China, Canada, Germany, France, Japan, New Zealand, Italy and the Netherlands are the top 10 countries from which our collaborators are drawn measured by numbers of publications.) Sydney researchers are also involved in multinational collaborative research programs, including several funded by the US National Institutes of Health and the European Union, particularly in health and medical research, but also in the physical sciences. We also have extensive research linkages with leading international universities throughout the world through our membership of three major international network groups: the Academic Consortium 21 (AC21), the Association of Pacific Rim Universities (APRU) and the Worldwide Universities Network (WUN). These forums provide a platform for connecting our researchers with other leading researchers through contact groups, and have given rise to a number of major collaborative projects that would otherwise not have happened.

In one sense, collaboration with researchers outside the University, and particularly overseas, is extremely important. Having our researchers entrenched firmly within global research networks is important for ensuring that our research is of an internationally competitive standard; seeking the best in the world for multidisciplinary collaboration is one way to ensure excellence.

However, we believe that for interdisciplinary research to flourish, where transformational impacts often arise from researchers in one discipline learning the language or methodology of another, it is essential to provide environments where researchers can come together formally and informally on a regular (daily) basis and learn from each other. Notwithstanding the advances of information and communications technology to facilitate collaboration, this is more likely to happen where researchers from different

disciplines are working together in the same institution and in physical proximity. For this reason we think it a priority for the University to reduce any barriers, to collaboration with other researchers in cross-disciplinary teams within the institution itself, and to increase incentives to do so. Indeed, we perceive that there may be a bias in the University towards external collaboration – even where higher quality work is being done in the relevant field within the University itself – that we ought to overcome. Our strategy for facilitating cross-disciplinary work within the University is outlined later in this chapter.

2.   The quality of our research

Most importantly, all our work, whether disciplinary or cross-disciplinary, in an established or emergent field, responding to or setting the public policy agenda, or foundational or applied, must aspire to a particular quality. This is that it makes an original and significant contribution to knowledge or understanding at an internationally competitive level for someone working in the relevant field at the relevant stage of their career.

It is important to unpack this notion of an internationally competitive level. In a following section we discuss various ways of measuring the quality of our work, but it is important to understand what it is that we are trying, with different proxies, to measure. By an internationally competitive level, we do not necessarily mean that the work must be internationally recognised. We have many researchers working in fields of purely local or national interest. What we mean is that the work should have a methodological and analytical rigour that would be recognised by researchers in the field as characteristic of the highest quality work, or display a degree of creativity that is recognised by the quality measures of its discipline area. We believe that this should be the standard to which we hold ourselves accountable, both as individuals and as communities of researchers. It should be the standard to which we aspire in our process for confirmation to continuing appointment ('tenure'). It should be the standard to which we aspire in our performance management processes for academics and in our reviews of the work of faculties. Importantly, however, it must be applied with an eye to both the field in which the researcher (or group of researchers) is working and their career stage.

B: Sustaining and enhancing research excellence

If we are to sustain and enhance our tradition of producing work of the kind and quality outlined in the previous section, we cannot take our continuing high level of performance for granted. Indeed, although indicators such as success in competition for research grants may be strongly affected by cyclical variations, the external data suggests that some of our traditional research strengths may be vulnerable. Against external measures of excellence, our performance is static or declining in some of our traditional areas of strength. In some areas we are declining in weighted higher degree completions and being outcompeted in total research income and publications by some other Group of Eight universities. We are experiencing a flat or declining competitive position for Category One funding for some faculties; and we are seeing declining numbers of higher degree completions per academic staff member at level B and above (see Appendix 17).

In order to maintain and improve our performance, we suggest that five issues need to be addressed as a matter of priority. These are that we need to: (i) develop the

research capacity of our staff at all stages of their careers, but particularly at points of transition; (ii) develop an evidence-based understanding of our collective research strengths; (iii) focus our areas of research activity to create critical mass, to support emergent fields of research, and to respond to issues of national and international importance; (iv) move towards organisational structures that align with and support our areas of research strength in the disciplines and cross-disciplinary research areas; and (v) ensure that our systems of commercialisation effectively assist in the dissemination of the University's research. Each of these strategies merits separate consideration.

1.   Developing the research capacity of staff

Our statement of strategic purpose aspires to an environment in which the 'brightest researchers' can do research of the highest quality. We must create and sustain an enriching research environment, helping to build the research careers of our staff in an environment of first-class research, research training programs and infrastructure. In Chapter 3 we outlined the challenges we face in providing the needed facilities and infrastructure for internationally competitive research. Here specific consideration is given to support for the development of our researchers.

Within the University, developing the research capacity of staff has principally been the responsibility of the faculties, schools and institutes where the expertise and experience is best placed to identify and respond to needs. The University has, however, had a number of schemes to support researchers, particularly those facing challenges that can negatively impact on the development of their research work. For example, University funding is provided for bridging support for 'near miss' Australian Research Council (ARC) and National Health and Medical Research Council (NHMRC) grant winners to enable momentum to be maintained for a subsequent application; and 'gap year' salary support is also provided for ARC- and NHMRC-funded fellows who miss out on a subsequent fellowship. We have a number of initiatives to recognise and support researchers with particular needs so they can develop to their potential: the Brown Fellowships support researchers re-establishing careers after significant caring responsibilities; the Thompson Fellowships address the under-representation of women in senior academic positions; the Laffan Fellowships support researchers with disabilities; and the first stage of a comprehensive strategy to support Indigenous researchers noted in Chapter 5 will begin over the next six months. In addition, the University's learning and development unit (Learning Solutions) provides assistance through both University-wide programs and support of individual faculty initiatives.

Desirably, however, we would have a more comprehensive University-wide and data-informed strategy for identifying and developing research-able students and staff at all levels. There are (at least) six capacity-building initiatives we need to consider that can be grouped into two broad sets: four that focus on our future researchers and two that focus on our research staff. We propose that each of the possible initiatives should be explored first in dialogue between the Research Committee of the Senior Executive Group and the faculties, with some operating on a University-wide basis, and some on a faculty basis. These initiatives should be developed in consultation with the Academic Board.

Developing our future researchers

First, we must develop processes to spot talented researchers earlier. For example, we need to be more effective in identifying research potential in our undergraduates to build the cohort of promising students in our honours and other research training programs. This is a matter for faculties as they think through curriculum reform and the need to get students actively involved in research as early as possible in their university career. Second, and in a similar vein, we need to align talented undergraduate students with researchers in ways that lead to publications and reputation at the time of starting their PhD. These early publications are invaluable for the students' subsequent competitiveness for external postdoctoral funding. Third, we need to employ more students in research-related activities that complement and extend their education so as to direct the time that they commit to paid employment to work that will give them a taste for research. This initiative could be led by SydneyTalent. Fourth, we need to think carefully across the University about postgraduate research training in the way outlined in Chapter 5.

Developing and extending our researchers

As a matter of priority, we propose a comprehensive review of our existing programs designed to develop researchers at all stages of their career, including early career researchers and researchers with special needs. This review should include the issue of support for researchers moving into positions of leadership, particularly in areas of research strength and for large-scale cross-disciplinary teams where we are seeking to build critical mass. Where these programs are proving successful we should expand them, where they are not we should reformulate them, and where we currently have no focused programs we must develop them. This analysis should be evidence-based as many schemes to support researchers that seem worthwhile in concept may not deliver in practice. For example, we have a University-wide visiting fellows program for collaboration with our staff, but only a very limited number of these collaborations (around 16 percent) have resulted in joint publications and even less (around 2 percent) have been awarded grants.

Three groups for which targeted internal funding may be particularly appropriate are emergent researchers, mid-career researchers and researchers assuming new leadership positions. Emergent researchers are researchers entering a new field of work in which support is needed to acquire additional skills or experience; supporting emergent researchers is crucial if we are to develop our capacity in cross-disciplinary work. Mid-career researchers may require similar assistance given that they often fall between grant processes designed for early career researchers on the one hand, and established researchers on the other. Importantly, however, we also need to provide support for more senior researchers to develop their broad leadership capabilities. These programs should have a specific focus on the requirements for leadership of larger efforts, where leadership is needed in areas of research strength, including for large-scale cross-disciplinary research programs and teams and in emerging areas where we are building critical mass. For example, the demands on research leaders in these positions will require them to have well-honed relationship management and communication skills, in addition to traditional management skills and their core research skills and knowledge. Our success in building critical mass in areas of strength will depend to a considerable extent on the quality of their leadership, and we must be prepared to assist their development and to continue to support them with structured and focused programs.

Second, there is a compelling argument to build on the effective elements of current programs to create a coordinated, University-wide induction, orientation and ongoing mentoring program, particularly for early career researchers. Through such a program, our early career researchers could also be linked into organisational structures and systems that provide a conducive environment for intellectual cross-pollination and identification of collaborators in other disciplines, something that is necessary to promote the emergence and formation of cross-disciplinary teams among this group. We propose that the Research Committee of the Senior Executive Group should develop centrally coordinated programs of early career researcher induction, orientation and mentoring. Indeed, we need to examine more consistent mentoring and other support processes across the University at all career stages that enable those identified to develop their skills. In particular, it is essential that research leaders develop the capacity both to identify and meet the development needs of their researchers and to initiate and lead cross-disciplinary projects. Our support processes for senior academic staff should address this need as a matter of priority.

2.   Understanding our research strengths

It is both a legitimate public expectation, and essential for the development of our research strategy, that we can identify our areas of greatest research strength. We need an evidence-based understanding of the quality of our work. Without such an understanding, we could not even begin to discuss whether and where to focus our efforts or invest our resources; review our progress and evaluate our achievements; respond to emergent fields of research in ways that build upon existing strengths; nor respond to, or seek to influence, public policy agenda of various kinds. It is simply crucial that we agree University-wide instruments and timelines for the assessment of our performance in different areas.

These instruments for internal quality assessment, particularly for cross-disciplinary research, should dovetail with, but not be wholly determined by, the federal government's Higher Education Research Data Collection (HERDC) and new Excellence for Research in Australia (ERA) program. A combination of HERDC and ERA data with publicly available citation data and reports can be used as an initial calibration of our competitive advantage and of the relative strengths of competitors, including their potential as collaborators, both nationally and internationally.

Limitations of current data sets

Of course, the accuracy and appropriateness of both the HERDC and ERA data, and of any data that we choose to collect, need to be carefully assessed. Two examples of the difficulties in existing ERA data are pertinent as cautionary tales, and while the examples are both drawn from the ERA trial, the issues are common with all data capture and analysis protocols. The first example concerns our ERA trial submission results for astronomical and space sciences. The recent trial submission for the Physical, Chemical and Earth Sciences concludes that while the University's physical sciences are overall excellent, they are below both the Australian and Group of Eight average result for astronomical and space sciences. This is surprising given that this is an area that we have identified as a particular research strength. We have two Federation Fellows as well as

an ARC Professorial Fellow publishing almost exclusively in this Field of Research code and submitted over 700 journal articles, of which 66 percent were in A* journals, and a total of 84 percent were in A* or A ranked journals. The Research Evaluation Committee noted in their feedback that this was "just below" the world benchmark, but that citation indicators were "well above the world benchmark." Our below-average score of four therefore indicates that ERA scores appear to be heavily influenced by even a relatively small proportion of outputs in B or C ranked journals. The higher scores of much smaller astronomy and space sciences departments at some other leading universities indicates that ERA does not recognise and reward large prolific departments, where excellence is more likely to be 'diluted' than in a small department. Thus, a large research team may have 10 to 20 members who outperform any in a smaller team, but still receive a lower score. Given that we do have significant research strength, with respect to both disciplinary depth (astrophysics) and cross-disciplinary innovation (astrophotonics) and by acclamation of our national colleagues are the lead institution in an ARC Centre of Excellence application in this area, the ERA evaluation highlights how difficult it can be to have a robust data collection and evaluation process that leads to sensible conclusions. The potential fallout of inaccurate evaluations can be pondered as we consider Australia's ambitions to be the site for the high-profile international Square Kilometre Array project and the potential for government misconception with regard to our abilities.

Another result from the Physical, Chemical and Earth Sciences trial was that no university in the country met the minimum volume threshold for assessment in theoretical and computational chemistry, a discipline in which Sydney has an extremely strong and active research focus, arguably one of the best in the world. Such an erroneous result in ERA could have serious implications for the standing of this discipline in Australia, impacting our ability to attract staff and students and to obtain federal government funding. A major contributor to the area is one of Australia's most cited scientists, and another has been the recipient of the highly prestigious Welch Award in Chemistry. Although these and other researchers in theoretical and computational chemistry publish extensively in high-impact journals, few of these publications are in theoretical and computational chemistry journals, in part because the specialist journals in this field mostly have lower standing. Many articles from our theoretical and computational chemists are published in prestigious A*-ranked multidisciplinary journals (for example the *Journal of the American Chemical Society*), and the reassignment of these articles into four-digit field of research codes for assessment was done by analysis of the cited and citing references of each article. However, as theoretical and computational chemistry can be considered an 'enabling' science, articles in this field are often cited by the scientists who use their results in their own field of research, rather than other theoretical and computational chemists (for example a computational study of an enzyme is cited more by biomolecular chemists or biochemists than by other theoretical chemists). Similarly, articles in this field often cite references describing the problem that they are studying, rather than other theoretical and computational chemistry references. Other articles by theoretical and computational chemists are published in journals that have been assigned a too-narrow field of research code (for example, *The Journal of Physical Chemistry A* has been assigned to the field of research code 0306 Physical Chemistry, but in fact also publishes research relating to "molecular structure, quantum chemistry, and general theory").

Moreover, even assuming that we arrive at robust HERDC and ERA data collection and analysis protocols in which we have ultimate confidence, we know they will not fully meet

our needs for understanding our research strengths. First, they are backward-looking and two to eight years out of date. Contemporary, ongoing collection of validated evidence is needed, such as publication outputs. Second, we know that ERA does not, and in the foreseeable future will not, effectively evaluate cross-disciplinary research. Third, there is no necessary connection between the field of research codes under which ERA data are collected and either our organisational structure or academic strengths. Fourth, the ERA data are mostly quantitative, and while metrics such as income and citation data are useful in some fields, such as the natural sciences and medicine, they are less useful in fields within the humanities, for example. As Sydney has significant research strength in the humanities (for example, in philosophy, religion and history) additional peer-review over and above that provided for within ERA will be necessary in our internal assessments of performance. Finally, data on translational outcomes will not be tracked by ERA and will need a different monitoring system. This will be important, for example, to demonstrate Sydney's strength in clinical research in the context of the NHMRC-led Health and Hospital Reform Initiative calling for a paradigm shift in evaluating medical research with a renewed focus on clinical translation. Developing reliable and replicable measures of the extent to which clinical research is translated into improved practice, and forms the basis of training and mentoring of future generations of health professionals, will be important in maintaining a leadership position.

New instruments for measuring research excellence

The new instruments and processes that we use to assess our research performance and measure quality will only be possible if we also develop information technology systems that capture and store accurate and comprehensive data from all areas of the University, and enable it to be analysed in ways that directly inform and support our research excellence strategy and optimise our capacity to identify, develop and maintain our focus on what is truly excellent.

While we currently collect research management data across the University, the information is fragmented. A recently introduced research management system has delivered significant capability for grants management; the first stages of its development were aimed at streamlining the business processes and providing an integrated and comprehensive system for grant data management, grant applications and post-award management. However, we are only part way through developing that system into an enterprise system for the capture, storage and analysis of research quality information that would provide a holistic and shared view of research at the University. Further development is needed to provide the sophisticated strategic capability we will need to assess our research strengths and transform the way we develop and manage research at Sydney. We propose that further development of this system should be regarded as a matter of priority for the planning period.

A fully developed solution will: (i) provide researchers, outside entities, and administrative and executive University staff with the ability to access a central information dashboard, permitting comprehensive research management, reporting and analysis; (ii) encompass a range of data including researcher profiles, research income and outputs, presented either individually or grouped at any hierarchical level; and (iii) be capable of providing responses to a wide range of queries about research expertise and strengths, to research collaborations and citation data, where appropriate. Critically it aligns with

the University's overall research excellence strategy, reflecting and supporting the new organisational, administrative and resource allocation models.

Of course, data capture and analysis is an important first step, but not the only part, of understanding our different research strengths. Also important is a qualitative assessment of different areas of our work, including areas of research less amenable to quantitative assessment such as the creative and performing arts and some humanities, and the development of an understanding as to its trajectory for improvement. To this end, we propose that the Academic Board and the Senior Executive Group should take forward its project of creating joint faculty reviews. Moreover, we propose that those reviews, while retaining the strength of the self-evaluation focus of the current Academic Board reviews, should also include some input from external reviewers with expertise in a research-relevant discipline. This external perspective is consistent with the quality paradigm outlined in the opening section of this chapter.

3.   Focusing our research activity

In an internationally and nationally competitive research environment, it is increasingly difficult to sustain high-quality research across the board and achieve the impact that we should. Greater concentration of research investment in key strategic research areas is both required and inevitable.

Universities have often been reluctant, particularly at an institution-wide level, to be strategic in the development of specific areas of research. This reluctance is for three good reasons. First, the most important research breakthroughs are often the product of serendipity and university administrators have been unsure of their ability to identify appropriate areas for investment. Second, resource allocation mechanisms in universities, such as our own new model, have often been designed to return resources to the faculties or schools that earn them, so as to increase the incentive for those faculties or schools to engage in activities that will ensure the ongoing financial health of the institution. Money invested in strategic research projects has often been seen as interfering with this system of incentives. Third, and most importantly, the principle of academic freedom requires that individual academics, and groups of academics, remain free to pursue those areas of enquiry that they find most compelling. These concerns are valid and university administrators should be reluctant to interfere with the creative evolution of an institution's research expertise.

Nevertheless, taking account of the size of the funding available in Australia for research, it is not practical for the University to strive to conduct all research areas at the highest level. We believe that in the current environment, strengthening research excellence will require us to focus on developing critical mass and depth in a few (say three to seven) strategic areas, while supporting a larger group of areas (say 20 to 25) where we are performing cutting-edge research. This in turn requires more strategic decision-making about our focus in research than we have seen to date, and that these strategies should be devised both at the University level and at the level of the new vertical units of the University, however they might be organised. It is essential that, on the basis of the type of information outlined in the previous section, the University and the new vertical units can identify both their existing strengths and those that they wish to grow, and that they have a coherent research strategy. We propose that this should be a priority for the new vertical units and for the Research Committee of the Senior Executive Group.

Building critical mass

There are several ways in which we can create focus and build critical mass in areas that are prioritised. One is through structural reform that addresses the problems of the fragmentation of disciplines among the various faculties and creates appropriate governance arrangements for horizontal units of the type outlined later in this chapter. There is also the option of direct investment in developing key areas through the allocation of discretionary funding, targeted fundraising, the allocation of funds from the University strategic fund created under the new Economic Model, and the appointment of new research staff in targeted areas at all career levels, including research students. This targeted investment should take place at both a University-wide level, and at the level of the new vertical units. Finally, this targeted investment should coordinate with our planning for infrastructure investment and improvement.

A commitment to targeted funding and to developing research infrastructure is essential if we are to be successful in the international competition for high-calibre staff outlined in Chapter 2. As a nation with a small population that is geographically distant from major research infrastructures in the United States and Europe, we need to provide incentives that overcome geographical and social barriers to recruitment from these sources where it is necessary to build and support an area of research strength that supports our strategic priorities. One such incentive would be a commitment to build critical mass in the area of research that would support the potential recruit. The strategy pursued by the Faculty of Education and Social Work to set up the Centre for Research on Computer Supported Learning and Cognition through the creation of two professorial positions filled from the United Kingdom and Germany exemplifies this approach. Strategic recruitment of this kind is essential to develop identified key areas of work.

Supporting emergent areas of research

This commitment to focusing our work should not preclude emergent areas of research. Indeed it should give us the flexibility to support it, whether on a University-wide basis or at the level of the vertical unit. In order both to remain competitive and to deliver benefit to Australia and the wider world, we must focus not only on existing research strengths, but also on the conscious identification, and support of, such new areas of work. In many areas this will happen as a result of the evolutionary dynamic of the research of the University community without intervention. But in some areas significant investment in either people or infrastructure will be required. The University should be prepared at any given time to make strategic investment in a small number of these emergent areas.

One area of emergent research for which we are seeking to build capacity through an Education Infrastructure Fund (EIF) application is nanoscience. Inspection of our publication data shows that there has been a dramatic increase in total numbers of publications in this field by our researchers. We are yet to have the tools to quantitatively evaluate the quality and impact of this productivity by a set of agreed and objective measures. But assuming such measures support our current view, by building on our emerging capabilities in nanoscience we might well have potential to deliver research outcomes that could result in transformational benefits for society in areas as diverse as communications, medical diagnostics and astronomy. Nanotechnology, however, requires dedicated, purpose-designed infrastructure for the rapid design, fabrication, testing and

evaluation of leading-edge concepts that is located so as to maximise the opportunities for cross-disciplinary exchange of ideas and methods. We propose that the Research Committee of the Senior Executive Group be asked to identify, during the planning period, perhaps one other area of emergent research that the University might choose to support.

Responding to and shaping the public policy agenda

Finally, the work of focusing our research investment should be conducted in dialogue with government at both state and federal levels. We should be looking to identify opportunities that resonate with its priorities. For example, we have recently leveraged the federal government's strong interest in international collaborations to create the opportunity to have a University of Sydney node of the renowned European Molecular Biology Laboratory to bring chemical biology into the Centre for Obesity, Diabetes and Cardiovascular Disease. This initiative will bring an important new foundation science capability into the centre – the chemical biology needed to identify potential drugs for therapeutics or probes for diagnosis. Similarly, we are playing a leading role in Australia's involvement in the Square Kilometre Array to continue to build critical mass in our astrophysics and astrophotonics.

One example of an area in which cooperation with public policy agendas will be crucial is that of health research. Our performance in the competition for NHMRC grant funding shows significant growth in recent years, in a climate in which NHMRC funding has seen significant increases (Appendix 18). To maintain growth now that NHMRC funding has flattened will require understanding how we can support the new NHMRC strategy that is calling for greater integration of the research being done within hospitals, and higher education and medical research institutes. While our medical research and research training programs are highly interconnected with our hospitals and medical research institutes, the lack of structures and mechanisms to bring this vital community together to speak with one voice when needed leads to other Australian states capturing major initiatives in areas where we have greater capability. Establishing a framework that enables greater integration and cooperation in strategic planning, as well as more cost-effective delivery of high- quality services, is essential to us being able effectively to leverage our clear research strengths in this area and place the University and the state of New South Wales in a leadership role for the sector. This is an ongoing area of work for us that should be the subject of focused attention in the planning period.

The work of identifying and focusing on particular areas of research will therefore be crucial during the planning period and must be undertaken with the aims of building critical mass, supporting emergent as well as established areas of research, and responding to, as well as setting, the public policy agendas. It is the responsibility of both the Senior Executive Group at the University level and also each of the new vertical units. Importantly, however, it does not mean that either the University or the new vertical units should inhibit existing research activities outside our identified areas of focus; but it does mean that resources should, where possible and compatible with the spirit of the new Economic Model in returning income to the units that earn it, be directed to grow those areas upon which we agree to focus.

4.   Creating organisational structures that support our research

Perhaps one of our most urgent priorities is to move toward organisational structures that align with and support our areas of research strength in the disciplines and cross-disciplinary research areas. This involves the simplification of our system of 'vertical' units such as faculties and schools in the manner described in Chapter 4. But it also involves the creation of appropriate arrangements for 'horizontal' units such as centres and institutes discussed in this chapter. In creating new models to organise and govern our research it will be important to recognise that different kinds of research strength will need differential treatment. Active cooperation from managers of academic units will also be required, supported by appropriate funding arrangements and guidelines for staff appointments that emphasise the development of research concentrations and the potential for leading and working in internationally competitive teams.

Creating research (and teaching) linkages that cut across vertical organisational structures requires a framework that fosters collaboration. Academics are often, by inclination, excellent collaborators. Driven by the logic of their research, academics rarely shy away from seeking out scholars and researchers in other fields whose work or expertise may illuminate their own. The first consideration is to ensure that universities do not put too many obstacles in the way of this informal collaboration. The more important consideration is how we might create other formal mechanisms to promote and support collaborations that move beyond the focus of an individual researcher to create teams of researchers working together on major research problems or developing research training and other teaching programs. This becomes particularly complicated when it involves collaboration, not only between faculties, but also with external partners such as associated medical research institutes and area health services. Providing for a range of organisational structures (including institutes, centres, clusters, networks and programs) that appropriately organise and present a hierarchy of research strengths while taking account of broader University strategic objectives will assist us in this.

The centres and institutes policy

At present our main means for promoting research collaboration is through our Centres Policy (see Appendix 19). This policy has been in place for a number of years, although refined and improved from time to time. In essence it establishes the principles for the formal approval of research centres and institutes and offers guidance on appropriate governance arrangements. In summary such research centres and institutes should involve more than one researcher; involve researchers from more than one school and preferably across different faculties; address major research questions; have the capacity to generate significant research outcomes (grants, publications, other forms of intellectual property, conferences, seminars and so on); may involve a research training component; should preferably have a board of management to oversee operations and to provide advice to the director of the centre or institute; and must have a viable business plan to demonstrate that the centre or institute is sustainable.

This formal framework has generated a significant number of centres and institutes. By 2007 there were over 320 approved centres and institutes. In that year a review of the policy and the centres and institutes established under the framework, led to the conclusion that the policy was not rigorous enough. In general, the review concluded that a number of centres were very small, essentially collaborations between two or

three staff, offering little additional impact, while some long-established centres were effectively moribund. Other issues also became apparent. Some centres and institutes apparently function more to advance the profile of small groups of researchers and add little to the research outcomes that would have been achieved by these staff in the normal course of duties.

A further consideration highlighted in the review was that the establishment costs of smaller centres and institutes were not always justified by their research output. In most instances, establishing a centre or institute creates a claim for school, faculty or University administrative resources. Centres often require dedicated administrative support that adds further to the salary costs in faculties. Adequate administrative support is appropriate to ensure the smooth functioning of these research groups, but it can become a hidden cost if centres and institutes proliferate without due consideration to administrative implications. Indeed, it seemed that some faculties were approving large numbers of centres without thinking about the overall financial impact of these decisions. Equally important, where the impact of a centre was marginal, the advantages of having a centre might well be outweighed by the costs of maintaining it. Too many centres and institutes were being established without placing each within a larger strategic and financial context to justify their establishment. Once created, there is a high potential barrier to dissolving a centre or institute as they frequently recruit powerful advocates from the business or professional communities who are convinced, justifiably or not, that the unit they are championing is engaging in essential and cutting-edge work. Often it would be far preferable to establish informal research networks to drive collaboration than to formalise groupings of marginal additional impact on the research profile of the University and high cost. As a consequence of this preliminary analysis, the guidelines were revised to set the benchmark higher for formal approval and all existing centres and institutes were required to reapply under the new guidelines. As a result around 60 centres and institutes were closed.

We now have around 270 centres and institutes, and while the new policy framework seems to be a suitable vehicle governing the establishment of centres and institutes, we are seeing renewed growth in the requests to form a centre in circumstances that do not seem to justify a formal centre governance and structure. Often the establishment of the centre seems merely a device to secure a particular type of (often inadequate) funding for its activities. At present, a centre or institute needs the approval of the Provost to be established, and its operation is approved for a fixed period. At the expiration of the period it is by default disbanded unless it makes a satisfactory case for its renewal. We propose that any new proposals, either for the creation or renewal of a centre or institute, should be signed off, not only by the Provost, but also by the Senior Executive Group on recommendation from the Research Committee. In this way we can ensure that all the faculties of the University have had sight of the activities of the unit, that duplication can be avoided, and that cooperation in particular initiatives can be encouraged.

Large-scale centres or institutes

The majority of entities established under the existing policy framework tend to be small-to medium-sized units, ranging from five to fifty or so academic staff, with additional numbers of research-only staff and research students (although some medical institutes are larger). This is appropriate in many fields of research. But there is no doubt

that the direction of modern cross-disciplinary research raises questions about how we facilitate the establishment of much larger teams that might have a substantial physical footprint, but would certainly have a research capacity that is beyond that which could be pulled together by a collaborative project. When we establish such an entity, it would seem desirable that its name would have some brand recognition that distinguishes it from most of the 270 centres and institutes that we currently have.

Contemporary debates about research orientation suggest that in the 21st century there will be increasing emphasis on very large-scale research projects, encompassing a much broader range of disciplines than ever before. Implicit in these debates is the view that research teams in the past, even cross-disciplinary teams, have been too narrow. The size and complexity of contemporary research agendas suggests that major impact and effectiveness might only really be achieved if we place basic and applied research in broader social, cultural and political contexts.

For example, there has been much discussion of late (particularly in the area of health) around the concept of translational research. A related phrase is research that goes 'from bench to bedside'. In other words, important breakthroughs in medical treatment might be more feasible in the future when we bring together large cross-disciplinary teams that work on the basic science involved in disease organisms; applied medical science, for example pharmacy, that can translate those basic research insights into a particular medical procedure or drug therapy; clinicians who can monitor the impact and effects of new therapeutic regimens and assist in revising and refining these therapies; nurses and doctors who can then implement new procedures; and social workers, psychologists, occupational therapists and others who can monitor the post-operative and outpatient elements of any new procedure. We might also add here that the research chain should extend well beyond the bedside to encompass public health and epidemiology; the history and anthropology of health and treatment strategies; the ethics and political philosophy of healthcare reform; social policy research; and legislative and administrative law reform. In other words the research pathway should lead from bench top, to bedside, to parliamentary chamber. Similar arguments can be made in other major research areas such as climate change, digital technologies, robotics, chemical engineering or urban design.

If this is the case, then a major research imperative will be to move beyond the teams of five to fifty and create research teams of one hundred, five hundred, perhaps even more. Obviously no university can support more than a few areas of such size and diversity but research-intensive universities will need to think seriously about the creation of such teams if they are to have research impact of genuine international significance in the future. This, of course, is not the only pathway to impact. There will always be a place for the lone researcher who has a brilliant idea or develops a breakthrough of major importance. But in the future universities will have to foster some large team-based research projects to be competitive.

Over the last three or four years the University has been thinking seriously about 'large research agendas' and how to pursue them. Sizable interdisciplinary research teams inevitably mean large horizontal structures that cut across numerous vertical structures such as faculties and schools. It was this insight that led to the creation of the Centre for Obesity, Diabetes and Cardiovascular Disease, which will be a major initiative for

the University over the planning period. In the last 12 months, the University has been carefully considering the case for establishing other large-scale horizontal projects, say another one or two over the planning period. We propose that it should do so.

Several possible areas for such initiatives have already been suggested, although no decisions have been taken as to the establishment of large-scale horizontal research and teaching units as a University-wide priority, outside the Centre for Obesity, Diabetes and Cardiovascular Disease. The identification of any areas for University-wide investment would need to be undertaken with the Research Committee of the Senior Executive Group and on the basis of strong evidence as to existing and potential research strengths. However, to give evidence of the potential for this type of collaboration we might mention four areas in which we should be active to bring together the research work of the University, whether or not they are identified as a possible object of major University investment. These four examples are not exhaustive, but rather illustrative, of the several fields in which the University could bring together significant pools of expertise.

The first of these is in the field of 'area studies'. Area studies are cross-disciplinary fields of research, scholarship and teaching organised around the study of particular geographical, national or cultural regions. Area studies initiatives typically concentrate on the society, politics, philosophy, economics, legal institutions, public health and culture of a specific region, but can include the sciences and other disciplines relevant to the area.

In 2009 a review was conducted into the feasibility of initiating an area studies strategy for the University. The review concluded that the University had significant interdisciplinary research and teaching expertise, across a broad range of schools and faculties, in major regions of the world. The extent of our expertise was largely hidden by the vertical structures of the University and even many researchers specialising in particular regions were often unaware of other scholars elsewhere in the University who shared their area of regional expertise. The report concluded that the University had significant groupings of researchers in such areas as South-East Asia, China, South Asia, the Pacific, Europe and the United States, with smaller groups with expertise in Africa and Latin America. It concluded that there were at least two regions, notably South-East Asia and China, where the University had a breadth and depth of expertise that was genuinely world class. In South-East Asia, with around 100 researchers active in the area, the University possesses what is arguably the greatest concentration of scholars in this field in the country, and would be the envy of leading institutions in the United States, the United Kingdom and mainland Europe. These researchers range across faculties as diverse as Arts, Economics and Business, Nursing and Midwifery, Medicine, Science, Engineering and Information Technologies, and Architecture, Design and Planning, which in part explains the current lack of contact between staff. Thus we have a real opportunity to build upon this work by establishing centres in two areas of significant current strength and strategic importance to Australia, South-East Asia and China. Indeed, SEG has already agreed that we should establish University-wide centres in China and South-East Asia, although the scope of these projects is still under discussion. This initiative could be a foundation for the establishment of other area centres over time as part of a strategy to enhance our international teaching and research reputation in this field of study.

Another possible area of investment and greater coordination is that of the humanities, social science and science of the mind and mind-related conditions. The University

already has one medium-sized research institute working in this area, though it represents just a part of the related research going on in the University. The Brain and Mind Research Institute is a medium-sized multidisciplinary institute (about 100 researchers) involving researchers in Science, Health Sciences, and Nursing. The focus of its work is neuroscience and new treatment regimes for major mental illnesses such as depression, bipolar disorder and schizophrenia. The establishment of the Brain and Mind Research Institute correlates with a significant upswing in neuroscience publications: however only a portion of our research capacity in neuroscience and neuromedicine is within the Brain and Mind Research Institute. Further, there is significant potential for positive collaboration and cooperation between the Brain and Mind Research Institute and the Centre for Obesity, Diabetes and Cardiovascular Disease, especially in the area of imaging. It is significant that the University ranks third in citations for neuroimaging in the English-speaking world. Thus we have the potential to focus and grow critical mass in this area of health research that has a devastating societal impact – substance abuse, clinical depression and dementia now account for more than 40 percent of all illness, costing the Australian economy an estimated $30 billion each year. Moreover, we could expand the range of this activity into everything from the philosophy of mind to the social policy of mental health care.

A third and a fourth area for greater collaboration evince initiatives in which not only the research work of the University, but also its own practice as an institution, could be brought together. These are in the field of social inclusion outlined in Chapter 5 and in sustainability through our Institute of Sustainable Solutions. This latter institute is working to bring together researchers in such fields as science, agriculture, engineering, information technology, economics, sociology and veterinary science, to formulate technical, economic and social solutions to the problems of environmental sustainability. But, it could also provide expertise for the University's own efforts to create an institutional life that is more sustainable. Indeed, it has done so already through our triple bottom line reporting project.

These four examples alone should demonstrate that there are a number of distinct areas in which one or two additional large-scale cross-disciplinary units could be established during the planning period.

The governance of cross-disciplinary centres and institutes

The history of interdisciplinary initiatives at the University, particularly centres and institutes, is salutary. While many of these joint faculty research initiatives have begun with much goodwill, it has generally been the reality that one faculty has taken primary responsibility for providing funding and administrative support for centres. Over time, the pressures of sustaining joint funding and providing administrative support, alongside inevitable tensions over allocation of research quantum and any student load that might arise out of a centre, has generally seen a gradual fall in enthusiasm and drift towards one faculty sustaining the lion's share of the responsibility. In other words, given the strong vertical pull in any organisational structure, centres often have to fight against the tendency to lapse back into a single faculty focus.

This problem may not be a significant one where the centre is small and focused on a narrow research theme. But if the University is to invest very significant resources into a few large-scale, cross-faculty research initiatives, it is imperative that there are measures

in place to sustain long-term interdisciplinary and multi-faculty commitment to these enterprises. Critical here is the creation of a governance structure that provides an equal voice for all partners and mechanisms for locking in long-term faculty commitments, allocating equitably the financial and other resource flows (such as student load), and a means of moving groups in and out of such initiatives as they develop over time.

The question of appropriate governance structures for large-scale research enterprises, which deal with a wide range of such issues, has been the focus of considerable work by the Deputy Vice-Chancellor (Research). She is guiding the development of an innovative shareholder system sitting alongside more common mechanisms such as a board of management and board of advice to manage the complex issues embedded in creating a well-functioning research structure. This work is still in draft phase and it will be refined over the next 12 months to be the basis for the establishment of large cross-faculty research enterprises. A key feature is that each participant unit or third party will participate in the centre on the basis of a collaboration agreement that will be specific to that participant in the joint project, the agreement covering a number of defined issues such as financial contribution, participation in teaching, and access to resources. The draft model has been developed after an evaluation of multidisciplinary governance practice in Europe (the European Molecular Biology Laboratory), the United States (Stanford, Michigan) and elsewhere in Australia (Melbourne) and is set out in Appendix 20.

Importantly, the developing model could also be used for the creation or reform of smaller centres and institutes, where appropriate, and thus help to ease collaboration between the vertical units of the University in the creation of horizontal units, the sustainability of which would be clearer, and the benefits to each party from participation more explicitly outlined.

Cross-disciplinary centres and institutes and education

Of course if we have major cross-disciplinary centres or institutes with substantial footprints and research capacity, we will wish to consider how these units support and benefit from research training, postgraduate coursework programs and undergraduate teaching. The current economic reality in higher education is that the full cost of research is not funded, and it is therefore impossible to sustain a research-only entity of the scale being considered here. Further, these facilities provide unique opportunities to offer students cutting-edge cross-disciplinary research training and education, with the real prospects of growing our student numbers with modern, new facilities. How we ensure an equitable distribution of resources flowing from teaching (fees and/or load, Research Training Scheme funding and so on) is essential if cross-disciplinary teaching is both to be encouraged generally and to be a source of support for these new centres.

Importantly, no centre or institute, however large, should be an admitting body for students. The support that such horizontal units derive from teaching needs therefore to be funnelled from the faculties, and earned under much clearer rules for sharing teaching income than we have at present.

We already have many degree programs that involve students picking units of study from a variety of faculties. In this context there are protocols for the distribution of resources, essentially on the basis of where the student takes the unit of study. Funding generally

follows the student. Thus if a student in Science takes a unit of study in Economics and Business, the latter faculty receives the load (or the fee if it is a postgraduate fee-paying course). This is a relatively transparent and equitable mechanism. There is a small inequity in that the faculty of enrolment, in our example Science, receives no compensation for the administrative costs involved in overseeing the student candidature when the student takes a unit of study in another faculty, but given that many students cross boundaries between faculties on a regular basis, this small inequity tends to be remedied in the give and take between faculties.

The difficult 'horizontal' issue arises when faculties formally collaborate in the teaching of particular units of study or even entire programs. When the key resource at stake is student load (in all undergraduate programs and some postgraduate coursework programs) we have fairly cumbersome but relatively well-established procedures for allocating load on the basis of the proportion of involvement by staff in different organisational units. For example if Engineering and Economics and Business were to offer a joint unit of study in, say, 'project management', and staff in Engineering offered half the teaching and staff in Economics and Business the other half, then the load could be distributed 50:50 to each faculty. This becomes more complex at the postgraduate coursework level when faculties have different fee structures. This can lead to a situation where staff from different faculties do exactly the same amount of teaching but one faculty gets significantly more funding because the fees in their faculty are higher. Again the mechanisms are cumbersome. Faculties can either agree on a compromise common fee structure or agree to accept the lower or higher fee figure for the particular program in question. The awkward nature of these protocols might be a disincentive to engage in teaching collaboration, although some does occur. As we come to implement the new University Economic Model we need to keep these matters in mind to ensure that we do not create even more disincentives to the kind of teaching collaboration that will be essential if we are to sustain and grow our cross-disciplinary work.

An area of difficulty, where the conventional mechanisms genuinely obstruct collaboration, is in relation to research training as the funding implications of Research Training Scheme load drive policy outcomes that are not always in the best interests of students. As noted in Chapter 5, current Academic Board policies prescribe a primary supervisor, with the possibility of associate supervisors from other areas. This is to ensure that students have a single point of affiliation with the University, so that there is consistent oversight of their candidature. This has the support of faculties, as most faculties are anxious to preserve the Research Training Scheme load (and the associated funding benefits) for themselves. Federal government funding policies for research students reinforces this tendency to hoard Research Training Scheme load. But some students would actually benefit from genuine co-supervision across faculties. One of the challenges for the future will be to work with the Academic Board to reconsider policies on research student candidatures to better facilitate co-supervision. That will also require fine-tuning of the University Economic Model to remove financial disincentives to co-supervision. Ironically perhaps, our proposed new vertical structure described in Chapter 4 which creates larger groupings of many faculties, might facilitate just this objective. If funding is delivered at a higher level than the faculty then internal distribution mechanisms can be worked out more easily to compensate faculties for collaboration in research training.

One thing that is clear, however, is that a focus on cross-disciplinary research training is essential as we develop our research training in the ways outlined in Chapter 5. At the moment the Sydney University Postgraduate Representative Association (SUPRA) organises a postgraduate conference in which students present their work to one another, across disciplinary boundaries, as do several other groups in the University, but we propose that we explore formalising this type of cross-disciplinary encounter as a normal part of graduate research training. This would certainly support a Sydney culture conducive to partnering and collaborating across traditional discipline areas, and encourage research students to value the rewards that come from working in this environment. A strong set of cross-disciplinary graduate training offerings might well be a means to attract new student cohorts which, if coordinated with infrastructure and research plans, could be an important component to sound, forward-thinking academic and financial planning. Consider again our example of the Centre for Obesity, Diabetes and Cardiovascular Disease for which we will need a strong research cohort of bioinformaticians who understand basic biology; this is a research skillset that is in great demand internationally and in short supply in Australia which for which our interdisciplinary project could provide excellent training.

5.   Dissemination and knowledge transfer

A final priority for the development of our research during the planning period concerns its dissemination, and in particular the further development of work that has been proceeding on the principled dissemination of our research through its commercialisation.

The primary vehicle for the dissemination of our research is unquestionably peer-reviewed literature. However, other forms of dissemination are also important, particularly where research is in a form that can be adopted by the community. In some circumstances such research can make a significant public impact by being actively contributed to the public domain through open access licensing regimes such as 'open source' and 'creative commons'. In appropriate cases, licence models can be adopted which allow such innovations to be contributed freely to the academic community while licensed for value to industry. Open access licensing models are particularly relevant, for example, to the translation of innovations in information technology and some research tools. We propose that, where possible, the University should have a bias towards allowing open access where doing so would be in the public good.

However, there are other categories of discovery, for example in areas such as biotechnology, medicine, engineering and novel materials, which require significant further development before they can be translated into usable products and services that can be adopted by the community. The outcomes of this type of research will be translated into tangible social and economic benefits only if potentially valuable discoveries are protected and licensed to commercial partners who will invest in their development. To ensure that the outcomes of University research are translated in ways that create the maximum social impact, it is therefore important that we have the capacity to undertake many different kinds of research translation activities, including intellectual property protection and commercialisation. For this we need clear contractual arrangements and clear rules giving expression to the University's policy on intellectual property protection. We are therefore in the process, with the Research Committee of the Senior Executive Group, of revising the University's Intellectual Property Rule.

Underlying our approach to intellectual property ownership and the exploitation should be a commitment to serve the public good in ensuring dissemination and translation of new discoveries, with commercial income for the University and its researchers a secondary potential benefit. There are some technologies from which moderate income can be derived, and rare examples of discoveries that can lead to a significant income for the University and the researcher. Such income can be a source for strategic investment in research, and we should therefore be positioned to benefit from such discoveries and to provide incentives to reward researchers. The University should responsibly manage its intellectual property resources to these ends, but dissemination of our research remains our primary purpose.

Given that our primary purpose in commercialising our research is to maximise the effective dissemination of our research outcomes, our activities in this field must always remain consistent with our fundamental academic principles. Key drivers include protecting the University's ability broadly to disseminate its research findings, freely to undertake further high-quality research in the same area, and to maximise the social impact of the University's research outcomes. Important University values which underpin our commercialisation activities are reflected in the Association of University Technology Managers document *In the Public Interest: Nine Points to Consider in Licensing University Technology*, which the University endorsed in April 2009.

One key challenge in the translation of all university research is that university inventions are generally at an early stage in the technology development process. When new inventions are reported, it is common that further supporting data and evidence of proof of concept is required to support an international patent application, and to develop the invention to a stage where it is ready to be licensed to industry. In order to promote the translation of University research, sources of funding must therefore be available to support these activities. The University makes funds available to support development work relating to new inventions through the Sydnovate Fund, which has been successfully used to fund experiments to support international patent applications over University technologies. The University now needs to position itself to access new federal government funds which are available to support intellectual property development and commercialisation activities, including the funding of schemes offered through Commercialisation Australia.

Setting a strategic direction for our research of the kind that we propose in this chapter clearly requires significant changes to how we develop and support research at the University. That we have to make changes is inevitable given the changes occurring to our external and internal contexts discussed in chapters 2 and 3. By choosing to do so strategically we give ourselves the opportunity to make choices that might otherwise be made for us by the pressures of the external and internal contexts. The preceding sections argue for a significantly more active approach to identifying areas of research strength and those areas of research that have promise rather than prominence. This would require a fundamental restructuring of our approach to supporting and managing research activity across the University, and to how we integrate our efforts with research partners outside the University.

In implementing change it is crucial to ensure that the University gains the benefits sought and that the quality of the research done within the University is maintained and continues to grow; even better that we are able to take important research priorities to a new level of international recognition. An evidence-based approach to decision-making will be essential. We must be vigilant in our commitment to challenge the evidence on which we rely to make decisions and recognise when we are trapping ourselves by responding to legend rather than fact. It will be extremely important to remain alive to the unintended consequences of our decisions that could be detrimental to the University's overall research efforts. But if we are able both to focus our research efforts in this way, and to retain a culture in which researchers are free to pursue their own intellectual passions, especially where they work in fields dominated by lone-scholar research, then we will have enormous potential to build upon the undoubted international research strength of the University. We will then have helped to sustain and develop an environment in which the brightest researchers can flourish for the benefit of Australia and the wider world.

CONCLUSION

The University of Sydney is a highly regarded and much-respected international university renowned for the quality of its research and teaching. As our staff and student surveys, interviews and focus group discussions have revealed, there is a genuine depth of affection for the University. It is an extraordinary institution that has left an enduring mark on our culture and on the lives of many who have passed through its halls. Our staff, students, alumni, friends and supporters want the University to do well. And they are proud of all that we have achieved together over the years. But all of the evidence suggests that they believe we can do better. They have identified weaknesses and shortcomings that they feel are holding us back. These views and opinions merit serious consideration.

This Green Paper has embraced the call to do better. This requires a frank assessment of our strengths and weaknesses, taking on board the views of all those urging us to undertake change. The Green Paper has sought to outline our mission, to consider in greater detail where our weaknesses lie, and to highlight some of the important strategies we might pursue and further conversations we will have to have over the next five years in order to put the University in a stronger position to do more to realise the potential of the 'brightest researchers' and 'most promising students'. The University is clearly doing remarkably well in a complex and difficult higher education environment, nationally and internationally. The challenges ahead, however, are significant. It is vital that we meet them head on, and this will require us to do things differently in some areas from the way that we have done them before, which can be unsettling.
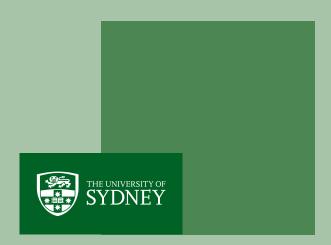
It is our view, however, that serious conversations about the strategic directions we need to pursue will be the basis for us to realise the extraordinary potential of our staff and students. If we, as a community, embrace the strategic directions outlined in this paper, refine them where necessary, and use this as a platform for genuine transformation, then we have every right to expect that the University will achieve more for its staff and students and the wider community. This is an institution that has made a wonderful contribution to our community. It can, if we chart the right direction, make an even greater contribution in the future.

TABLE OF APPENDICES

APPENDIX ITEMS

Appendices available at sydney.edu.au/green_paper

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